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Chignik Management Area Salmon Catch and Escapement Statistics, 1986

by

Bruce M. Barrett

State of Alaska

Steve Cowper, Governor

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ABSTRACT

In 1986 a total of 2,589,269 salmon were harvested in the Chignik Management Area by 100 permit holders who made 4,179 landings. The catch was 2.8% lower than the 1976-85 average but 90.9% higher than the 1985 catch. The species composition was 3,037 chinook salmon *(Oncorhynchus tshawytscha)*, 1,645,834 sockeye salmon *(O. nerka)*, 647,125 pink salmon *(O. gorbuscha)*, 176,640 chum salmon *(O. keta)*, and 116,633 coho salmon *(O. kisutch)*. Chinook, sockeye, and coho catches were above the 1976-85 average, while the pink and chum catches were below average. The majority of the chinook, sockeye, and coho salmon were caught in the Chignik Bay District, and the majority of the pink and chum salmon were caught in the Western District. The 1986 chinook escapement (3,896 fish) into the Chignik River was twice the 1976-85 average, while the sockeye escapement (773,319 fish) was at the 1976-85 average. The sockeye escapement was 73.2% (566,088 fish) Black Lake stock and 26.8% (207,231 fish) Chignik Lake stock. Excluding the Chignik River drainage, the pink escapement in the Chignik Management Area was 926,909 fish, while the chum escapement was 52,421 fish; coho escapement was not monitored. Most of the Chignik sockeye catch was age-1.3 (41.1%) and age-2.3 (44.7%) fish. The Black Lake sockeye run was predominantly age 1.3 (48.1%), while the Chignik Lake sockeye run was predominantly age 2.3 (55.3%). In the Chignik Bay District male sockeye salmon averaged a larger length than female sockeye salmon among the ages 1.3 and 2.3, but were smaller in average length than female sockeye salmon among the ages 1.2 and 2.2. Overall the average sockeye length was 560 mm, and the male to female ratio was 0.8:1. Coho salmon in the Chignik Bay District were 90.7% age 2.1. The average coho length was 592 mm, and the male to female ratio was 2.4:1.

KEY WORDS: Chignik River, salmon, catch, escapement, age, length, sex, Black Lake

INTRODUCTION

The Chignik Management Area is located on the Pacific Ocean (south) side of the Alaska Peninsula between Kilokak Rocks and Kupreanof Point (Figure 1). The area includes 490 miles of contiguous coastline and 90 specified anadromous fish streams (ADF&G 1985a). Commercial salmon fishing began in the Chignik area around 1888. Chignik fishermen currently harvest chinook salmon (*Oncorhynchus tshawytscha*), pink salmon (*O. gorbuscha*), chum salmon (*O. keta*), and coho salmon (*O. kisutch*) but mainly target on sockeye salmon (*O. nerka*). Chignik Lagoon and the western end of Chignik Bay are where most of the fishery occurs. The 1976-85 average salmon catch was 2.66 million fish, and sockeye salmon comprised 57.8% of that amount.

Essentially all the sockeye salmon harvested in the Chignik Management Area are produced in the Chignik River drainage which covers 580 square miles and includes two large interconnected lakes, Black Lake and Chignik Lake (Figure 2). There are two sockeye stocks in the system which are the Black Lake stock and the Chignik Lake stock. Both stocks overlap each other in timing. However, most of the Black Lake run occurs in June, while most of the Chignik Lake run occurs in July. The escapement objectives for the Black Lake stock and the Chignik Lake stock are 400,000 and 250,000 fish, respectively. Most of the spawning area for the Black Lake stock is in the inlet streams of Black Lake, while most of the spawning area for the Chignik Lake stock is on the shoals of Chignik Lake and in its inlet streams including Black River and its tributaries (Narver 1963).

Within the Chignik Management Area there are five fishing districts and 25 statistical areas (Figure 3). All commercial salmon fishing in the management area is limited to purse seining which usually starts in the first week of June. Prior to mid-July fishing time is based on the sockeye return to the Chignik River drainage. After mid-July management emphasis broadens to include the pink and chum runs to various bays and streams outside Chignik Lagoon. Escapement monitoring is conducted in-season. The sockeye and chinook escapements into the Chignik River system are counted through a weir located on the river 2.5 miles above the lagoon. The pink and chum escapements outside the Chignik Lagoon area are counted by aerial surveys. Coho escapements are not counted because of budget restrictions.

The Chignik Management Area is managed on local stocks with most of the seine fleet operating in terminal areas such as Chignik Lagoon. Some cape fishing occurs in the management area especially from June to mid-July. Interception fisheries in the Kodiak Management and Alaska Peninsula Management Areas target on Chignik River sockeye salmon. Fishermen in the Southeastern District of the Alaska Peninsula Management Area which includes East Stepovak, West Stepovak, Balboa Bay, and Beaver Bay Sections, are allocated 6.2% of the Chignik Management Area sockeye catch through 25 July. Another 15.0% of the Chignik Management Area catch through 25 July is allocated to seine fishermen in the Cape Igvak Section of the Kodiak Management Area. The allocations levels cited above are established in regulations by the Alaska State Board of Fisheries (ADF&G 1986).

This report presents the 1986 salmon catch and escapement data for the Chignik Management Area. Total catch is presented by species, district,

statistical area, and statistical week. Age and sex composition data from sampled sockeye and coho salmon are extrapolated to the catch. Average lengths by sex and age are calculated for each catch sample. Age, sex, and length composition data are presented for the sockeye escapement sampled at the outlet of Black Lake. Daily chinook and sockeye escapement counts through the Chignik River weir are listed. Aerial escapement counts are presented along with pink and chum peak counts and estimates of total escapement for each surveyed stream.

The objective of this investigation was to document the 1986 salmon catches and escapements and the associated biological sampling conducted in the Chignik Management Area. This information will serve as a data base for developing brood tables, forecasting returns, and evaluating escapement and management objectives.

METHODS

Catch data in this document were compiled by the Division of Commercial Fisheries of the Alaska Department of Fish and Game (ADF&G) from receipts (fish tickets) given to fishermen at the time of delivery. The fish tickets and computer-generated summaries were edited for errors and omissions. Due to the volume of fish tickets and numerous data entry steps, the catch data and allocation cited in this report should be considered accurate but not exact.

Commercial sampling of the sockeye catches in the Chignik Bay District was performed weekly aboard tenders operating in the lagoon. Coho catches were sampled once near the peak of the run in the Chignik Bay District. Sockeye escapement samples were collected in late June and early July at the outlet of Black Lake using a standard beach seine.

All catch and escapement sampled fish were measured for length (mid-eye to fork-of-tail) and age and sex were determined. Length measurements were taken using a standard caliper or meter stick and were accurate within 5 mm. Sex was determined by morphological characteristics (abdomen and snout). Age was determined from scales taken from the preferred area (INPFC 1963). One scale was taken from each sockeye salmon and two scales from each coho salmon. The scales were mounted on gum cards and later impressed in cellulose acetate using methods described by Clutter and Whitesel (1956). A standard microfiche reader was used to view the scale impressions for age determination.

All salmon ages are reported in European notation (e.g., 1.3). In this notation the first digit is the number of freshwater annuli and the second digit preceded by a period is the number of marine annuli. The total age is the summation of the first and second digits plus one for the year preceding scale development.

The sockeye and chinook escapements into the Chignik River were counted through a weir located on the river about 2.5 miles above Chignik Lagoon (Figure 2). The weir was operational from 31 May through 3 August except for three weeks from 14 June to 7 July when the weir was out due to high

water. A Bendix side-scan sonar counter was operated off the north and the south river banks at the outlet of Chignik Lake to monitor escapements when the weir was out. The number of chinook salmon entering the Chignik River after the weir was removed (3 August) was determined from the rate of chinook escapement counts over the last few operating weeks at the weir.

Escapements of pink and chum salmon were monitored in the Chignik Management Area by aerial stream surveys conducted from early July to early September. The aerial survey counts of pink and chum escapements by stream were used along with an assumed average stream life of 15 days for both species to calculate total escapement (Cousens et al. 1982; Johnson and Barrett *In Press*).

Most of the data in this report were stratified by statistical week and compiled using a personal computer. (A statistical week is a 7-day period starting at 0000 hours Sunday and ending at 2400 hours Saturday. Each is sequentially numbered beginning from the first Sunday in January.) A list of the 1986 statistical weeks with the corresponding calendar dates is in Appendix A. The sockeye scale samples collected in the Chignik Bay District were used to determine the age composition of daily sockeye catches and escapements. Before age composition estimates were calculated the daily catches in the outer districts and interception fisheries, and the daily escapements through Chignik weir were adjusted to the migration time of the Chignik Bay District. The migration times used to match the daily catches and escapements to Chignik Bay District were from Conrad (1984). These were: Cape Igvak and Stepovak, Balboa, and Beaver Bays, 5 days; Perryville and Eastern Districts excluding Aniakchak Bay Statistical Area, 3 days; Western District and Aniakchak Bay Statistical Area, 2 days; Central District, 1 day; and Chignik River weir, -1 day. With the catches and escapements adjusted to match Chignik Bay District timing, the age samples were then suitable for describing the age composition of the daily Chignik sockeye run. The daily run totals prior to the first sample were assigned the age composition of the first catch sample. The daily run totals coinciding with sampling days were assigned the respective age composition of the daily sample, while the daily run totals between sampling days were assigned the calculated linear interpolated age composition determined from the sample on each end of the non-sampled period. The daily run totals after the last sampling day were assigned the age composition of the last sample.

Mean lengths were computed from an unweighted composite of the data collected from each area sampled. Sex compositions were computed by week for each area sampled. Stock composition estimates for the Chignik Lake and Black Lake sockeye runs were obtained from the scale pattern analysis work cited by Probasco et al. (1987) which followed the methodology given by Conrad (1984). All graphically presented catch and escapement numbers in this report were smoothed by the von Hann linear/filter method (BMDP 1981).

RESULTS AND DISCUSSION

In 1986, purse seine fishermen in the Chignik Management Area caught 2,589,269 salmon and made 4,179 landings (Table 1 and Appendices A.2-A.6).

The 1986 catch was 2.8% less than the 1976-85 average catch and 90.9% more than the 1985 catch (Table 1). The chinook, sockeye and coho components of the catch were above the 1976-85 average, while the pink and chum components were below the 1976-85 average. The species composition of the 1986 salmon catch was 0.1% chinook, 63.6% sockeye, 25.0% pink, and 6.8% chum, and 4.5% coho salmon. The highest salmon catches occurred in the Chignik Bay District (64.2%) followed by the Western (13.6%), Central (10.0%), Perryville (9.3%), and Eastern (2.9%) Districts (Appendix A.2-A.6). Specific catch and effort data for the 25 statistical areas in the Chignik Management Area are presented in Appendix A.

In 1986, 100 limited entry permits were fished in the Chignik Management Area. The majority (87) were fished by Alaskan residents. Of the 4,179 landings in the five districts, most were made in the Chignik Bay District (78.8%) followed by the Central (10.9%) and Western (5.9%) Districts (Appendix A).

Chinook Salmon

In 1986, 3,037 chinook salmon were commercially caught in the Chignik Management Area, an amount 15.4% higher than the 1976-85 average and 58.3% more than the 1985 catch (Tables 1 and 2). A few chinook were caught in every district. However the majority (85.3%) were taken in the Chignik Bay District which is the terminal fishing area for the population which spawns in the Chignik River (Appendix A). The Chignik River is the exclusive chinook spawning area in the Chignik Management Area (Barrett 1987) and the only known spawning area on the south side of the Alaska Peninsula (ADF&G 1985a). Primary spawning occurs between Chignik Lake and the ADF&G weir (Burgner and Marshall 1974). In 1986 the peak chinook catches were during weeks 27 and 28 in the Chignik Bay District(Appendix A.2).

The 1986 chinook escapement into the Chignik River was above average (Table 2). The weir count of 650 mm and larger fish was 3,651, an amount 86.9% higher than the 1976-85 average of 1,953 and 16.1% higher than the 1985 count of 3,144. Chinook salmon entered the Chignik River during weeks 25 through 32 (Appendix B.1). The peak migration was in weeks 28 through 30 (6 July - 26 July). Sport fishermen caught approximately 450 chinook salmon (P.J. Probasco, Alaska Department of Fish and Game, Chignik, personal communication). The age composition of 49 of these sport caught fish was 6.3% age 1.2, 27.1% age 1.3, and 60.4% age 1.4 (Appendix B.2). In this sample, the age-1.2 chinook (6.3%) were all < 650 mm long and the older age classes chinook (93.7%) were all > 650 mm long (Appendix B.3). Because at the Chignik River weir 650 mm long chinook salmon are visually indistinguishable from sockeye salmon and consequently are not recognized as chinook salmon, the number of chinook passing through the weir was probably 6.7% higher than the weir count. Based on this adjustment 3,896 chinook salmon passed through the weir. The actual spawning escapement was approximately 3,446 accounting for the loss of 450 by the sport fishery. The male to female ratio in the escapement was 0.8:1, and the average chinook length was 883 mm assuming the sport caught sample was representative of the escapement (Appendix B.3).

More chinook salmon could possibly be harvested in the commercial fishery and growing sport fishery than currently. The 1977-86 average chinook harvest rate on the Chignik River stock was 57%, 16% less than the 68% optimal rate reported by Chapman of non-hatchery stocks of Pacific Coast chinook salmon (Table 2). In 1986, 55% of the run was harvested with the commercial fishery accounting for 85% of the take. A spawning escapement of 1,000 should provide near optimum production based on the relationship of escapement and recruitment over a 16-year period (1966-81) using equation 11.9 in Ricker (1975)(Table 3 and Figure 4).

Sockeye Salmon

In 1986 the Cape Igvak Section interception fishery landed 188,016 Chignik-bound sockeye salmon. Another 147,418 Chignik sockeye salmon were taken in the Stepovak, Balboa Bay,and Beaver Bay Sections of the Alaska Peninsula Management Area (Table 4). In the Chignik Management Area 1,645,834 sockeye salmon were landed. The total Chignik sockeye catch from the interception areas and Chignik Management Area was 1,981,268 fish

The 1986 Chignik Management Area catch of 1,645,834 was 7.0% above the 1976-85 average of 1,538,737 and 73.9% above the 1985 catch of 946,369 (Table 1). The stock composition was 69.1% and 30.9% Black Lake and Chignik Lake fish, respectively. The highest sockeye catches were in the Chignik Bay District (84.4%) followed by the Central District (11.1%)(Table 4). In the Chignik Bay District the peak catches occurred in weeks 25 (342,234 fish), 27 (266,887 fish), and 28 (223,422 fish), while in the Central District, the peaks were in weeks 25 (40,059 fish), 27 (31,903 fish) and 31 (27,025 fish)(Appendices A.2 and A.3).

Chignik Lagoon, which comprises most of the Chignik Bay District, is a staging area for sockeye salmon entering the Chignik River. In 1986 the average holding time in the lagoon was about 1.5 days. The average holding time between the lagoon and the Chignik weir was 0.5 days. These migration times were determined by visually comparing the sockeye catches in the lagoon with the sockeye weir counts (Figure 5).

The majority (91.4%) of the Chignik run was 5- and 6-year-old sockeye salmon (Table 5). Age-1.3 fish comprised the majority of the catch during weeks 24 through 27, and age-2.3 fish comprised the majority of the catch in weeks 28 through 38 (Table 6). Age-1.2 fish peaked in the fishery in week 25, while age-2.2 fish peaked later in week 29. The systematic change of age composition over time is characteristic of the two Chignik stocks, whereby the Black Lake which is an early stock is mainly age-1.2 and age-1.3 fish, and the Chignik Lake stock which is a late stock is mainly age-2.2 and age-2.3 fish.

The Chignik Bay District sockeye catch was evenly split between males and females (1.0:1) in week 24, the first week of the fishery (Appendix B.6). In weeks 25 through 33, males were consistently less abundant than females. The overall male to female ratio for the season was 0.6:1.

In the Chignik Bay District catch, the average length of male sockeye salmon was more than that of females among ages 1.3 and 2.3 (Appendix B.7). In ages 1.2 and 2.2 the average length of females was more than that of males. Overall, males (563 mm) averaged about the same length as the females (558 mm). The average sockeye length in the Chignik Bay District was 560 mm.

The Chignik River drainage is essentially the only sockeye system within the management area. In 1986, 731,343 sockeye salmon were counted through the weir on the Chignik River (Table 7). An estimated additional 41,976 escaped into the river after the weir was removed on 3 August, bringing the total escapement to 773,319. (B.A. Johnson, Alaska Department of Fish and Game, Kodiak, personal communication). Of the total escapement the Black Lake stock comprised 73.2% (566,088 fish), while the Chignik Lake stock comprised the remaining 26.8% (207,231 fish) (Figure 6). A total of 305 sockeye salmon were counted in aerial escapement surveys of streams outside the Chignik River system (Appendix C.1). Assuming the counts occurred at the peak of spawning and represented 50% of the escapement, the total escapement to these streams was 610. This, plus the Chignik River escapement, places the total sockeye escapement to the Chignik Management Area at 773,929 fish.

Escapement sampling is annually conducted at Black Lake primarily to provide standards for scale pattern analysis for assessing the Black Lake and Chignik Lake composition of the catch and escapement (Conrad 1984) and secondarily, for age and sex specific length data to use in forecasting the Black Lake run. In 1986, 1,901 legible scales were collected at Black Lake outlet. Most of the sample was age 1.3 (67.3%), age 2.3 (16.9%), and age 1.2 (11.4%) (Appendix B.8). Females were more abundant than males in all major age classes, except among the age-1.2 fish where males outnumbered females by a 2.9:1 ratio (Appendix B.9 and B.10). Overall, the male to female ratio was 0.8:1. The average male and female lengths were essentially identical at 564 mm and 566 mm, respectively (Appendix B.10). The average sockeye length in the sample was 565 mm.

The age composition of a composite of the 1986 Black Lake escapement samples essentially matched the age composition of the Chignik run for weeks 24, 25, and 26. Ages 1.2, 1.3, and 2.3 were 11.6, 66.9%, and 19.5%, respectively, of the total run through week 26, and 11.3%, 67.3%, and 16.9%, respectively, of the composite escapement sample (Appendix B.4 and B.8). The similarity of the age composition should not be considered a coincidence as the early Chignik run component is mainly Black Lake stock.

Considerable discrepancy exists between the calculated age compositions for the Black Lake escapement by scale pattern analysis and from escapement sampling at Black Lake (Table 5 and Appendix B.8). Conrad (1984) speculated that the large salmon schools at the Black Lake outlet and the river may be segregated by time of arrival and age class composition, and consequently the escapement samples obtained at the outlet, may not be representative of the escapement. In contrast Burgner and Burgner (1974) recommended using the Black Lake age samples for the escapement age composition, and indicated that the Black Lake escapement age composition among the spawning grounds tended to be uniform. In 1986 an escapement sample was taken in weeks 26 and 27 at the approximate mid-point of the escapement. Since each

sample represented the product of multiple seine hauls over a 2- to 3-day sampling event, it was unlikely that multiple schools were not encountered particularly considering that seine catches varied between days and there were few recaptures. The week 26 and week 27 escapement samples were significantly different in age composition based on the Chi-square test (α .01) (Appendix B.8). The 1985 escapement samples collected in weeks 26, 27, and 28 were each different (Chi-square test, α .05) (Barrett 1987). Since age composition temporally changes at the Black Lake outlet, weekly samples would be required to accurately measure the seasonal escapement age composition and verify the results of scale pattern analysis.

The total 1986 sockeye run to the Chignik Management Area was 2,754,587 fish, with 70.3% Black Lake stock and 29.7% Chignik Lake stock (Table 5). Approximately 71% of the Black Lake stock and 75% of the Chignik Lake stock were harvested. The combined harvest for both stocks was 72%, a level near the range of averages (60%-65%) from five Alaskan studies reported by Chapman (1986).

Pink Salmon

The total pink catch in the Chignik Management Area was 647,125 (Table 1). The catch was 10.4% below the 1966-84 even-year average but 45.0% above the 1984 catch. The majority of the catch was in the Western (31.0%), Chignik Bay (30.0%), and Perryville (24.9%) Districts (Appendices A.2-A.6). Peak catch occurred in the Western and Perryville Districts during week 31 and in the Chignik District, a week later during week 32 (Table 8). The combined escapement in the Western, Central, Eastern, and Perryville Districts was approximately 926,909 (Appendix C.2). Most of the escapement was in the Eastern (62.6%) and Perryville (19.5%) Districts. The Chignik River (Chignik Bay District) escapement was not counted. The total run to the Chignik Management Area, not including the Chignik River escapement, was approximately 1,574,034 fish, amounting to 41.1% catch and 58.9% escapement (Table 8 and Appendix C.2).

Chum Salmon

The total management area catch of chum salmon was 176,640 (Table 1). The catch was 13.1% below the 1976-84 average but approximately six times above the previous-year catch (Table 1). An unknown portion of the catch may have been interception fish destined for Stepovak Bay and other areas outside the Chignik Management Area. Most of the chum catch was in the Western (41.9%), Perryville (21.0%), and Central (16.7%) Districts (Table 8). Peak catches occurred in these districts during week 31. Chum escapement was approximately 52,121 fish, a level 15.5% lower than the 1985 estimated escapement of 62,013 fish (Appendix C.2 and Barrett 1987). The majority of the escapement was in the Central (59.0%) and Eastern (16.2%) Districts. The total chum run to the Chignik Management Area was approximately 229,061 fish assuming that the entire catch was local fish (Table 8 and Appendix C.2). Approximately 77% of the 1986 run was harvested, a level almost three

times the 1985 rate. Chapman (1986) cites the optimum exploitation rate at 48% (range 25% - 76%).

Coho Salmon

The total coho catch within the management area was 116,633 (Table 1). The catch was 12.0% higher than the 1976-85 average but 43.6% lower than the 1985 level (Table 1). The majority of the coho salmon were taken in the Chignik Bay (51.6%) and Western (28.9%) Districts. In the Chignik Bay District the peak catch occurred in week 36, while in the Western District the peak was in week 31 (Table 8). Coho salmon were catch sampled only in the Chignik Bay District. Most (90.7%) of the catch was age 2.1 (Table 9). The males were more numerous than the females by a 2.4:1 ratio, and the average coho length was 592 mm (Appendix B.11 and B.12). Coho escapements were not monitored in 1986. A few incidental escapement counts were made as listed in Appendix C.1.

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TABLES AND FIGURES

Table 1. The commercial salmon catch in the Chignik Management Area by species, 1960-86.

YEAR	CHINOOK	SOCKEYE	PINK	CHUM	COHO	TOTAL
1960	643	715,969	557,327	486,699	8,933	1,769,571
1961	409	322,890	443,510	178,760	3,088	948,657
1962	435	364,753	1,519,305	364,335	1,292	2,250,120
1963	1,744	408,606	1,662,363	112,697	9,933	2,195,343
1964	1,099	560,703	1,682,365	333,336	2,735	2,580,238
1965	1,592	635,078	1,118,158	120,589	9,602	1,885,019
1966	636	224,615	683,215	238,883	16,050	1,163,399
1967	882	472,874	108,981	75,543	13,150	671,430
1968	674	878,449	1,290,660	223,861	2,200	2,395,844
1969	3,448	310,087	1,779,736	67,721	18,103	2,179,095
1970	1,225	1,327,664	1,287,605	464,674	15,348	3,096,516
1971	2,010	1,016,136	612,290	353,952	14,557	1,998,945
1972	464	378,669	72,240	78,356	19,615	549,344
1973	525	870,706	25,445	8,701	22,322	927,699
1974	255	662,905	70,017	34,454	12,245	779,876
1975	549	400,193	66,165	25,161	53,283	545,351
1976	763	1,135,572	388,917	80,221	35,301	1,640,774
1977	711	1,972,219	604,824	110,452	17,429	2,705,635
1978	1,603	1,576,283	985,114	120,889	20,212	2,704,101
1979	1,266	1,063,742	2,056,999	188,169	93,146	3,403,322
1980	2,325	846,356	1,125,465	312,572	117,862	2,404,580
1981	2,694	1,839,469	1,162,613	580,332	78,805	3,663,913
1982	5,236	1,521,857	873,390	390,096	300,384	3,090,963
1983	5,488	1,823,057	321,160	159,362	61,915	2,370,982
1984	4,318	2,662,449	446,184	63,408	110,128	3,286,487
1985	1,919	946,369	174,966	26,143	206,624	1,356,021
1986	3,037	1,645,834	647,125	176,640	116,633	2,589,269
Average 1960-1986	1,702	984,574	806,153	199,111	51,144	2,042,685
Average 1976-85	2,632	1,538,737	813,963	203,164	104,181	2,662,678

Table 2. Chinook salmon catch, escapement, run and exploitation rate, 1960-86.

Year	Catch				Escapement[d]			Run	Percent Harvested
					Ocean Age				
	Commercial	Subsistence[a]	Personal Use[b]	Sport[c] (Freshwater)	.1 & .2	.3 & older	Total		
					(Weir Count)				
1960	643	75	100	50					
1961	409	75	100	50					
1962	435	75	100	50					
1963	1,744	75	100	50	145	564	709	2,578	76%
1964	1,099	75	100	50	236	914	1,150	2,374	56%
1965	1,592	75	100	50	243	942	1,185	2,902	63%
1966	636	75	100	50	212	822	1,034	1,795	48%
1967	882	75	100	50	387	1,500	1,887	2,894	38%
1968	674	75	100	50	258	1,000	1,258	2,057	44%
1969	3,448	75	100	50	155	600	755	4,328	85%
1970	1,225	75	100	50	645	2,500	3,145	4,495	32%
1971	2,010	75	100	50	516	2,000	2,516	4,651	48%
1972	464	75	100	100	453	1,500	1,953	2,492	30%
1973	525	75	100	50	212	822	1,034	1,684	45%
1974	255	75	100	50	173	672	845	1,225	39%
1975	549	75	100	50	226	877	1,103	1,777	44%
1976	763	100	100	50	181	700	881	1,794	56%
1977	711	50	100	50	206	798	1,004	1,815	50%
1978	1,603	50	100	69	309	1,197	1,506	3,190	57%
1979	1,266	9	100	45	271	1,050	1,321	2,651	54%
1980	2,325	6	100	55	506	876	1,382	3,758	66%
1981	2,694	100	100	80	413	1,603	2,016	4,830	62%
1982	5,236	2	100	120	622	2,412	3,034	8,252	66%

-Continued-

Table 2. (page 2 of 2)

Year	Catch				Escapementd			Run	Percent Harvested
					Ocean Age		Total		
	Commercial	Subsis-tence[a]	Personal Use[b]	Sport[c] (Freshwater)	.1 & .2 (Weir Count)	.3 & older			
1983	5,488	0	100	180	501	1,943	2,444	7,852	73%
1984	4,318	26	100	270	1497	5,806	7,303	11,477	41%
1985	1,919	1	100	400	594	3,144	3,738	5,358	45%
1986	3,037	6	100	450	245	3,651	3,896	6,589	55%
Average 1960-1985	1,651	59	100	83	390	1,489	1,878	3,749	53%

[a]Data from ADF&G subsistence permit catch reports for 1976-86; Data for 1960-75 based on the average catch for 1976 and 1977.

[b]The data are subjective estimates.

[c]Information source: 1960-67 data are subjective estimates; 1968-71 data Paul Pedersen (ADF&G pers. comm.); 1972-77 data Arnie Shaul (ADF&G pers. comm.); 1978 data Shaul (1978); 1979 data Nicholson (1979); 1980 data Nicholson et al. (1980); 1985 data Barrett (1987); 1986 data Pete Probasco (ADF&G pers. comm.); and 1981-84 data interpolated from the 1980 and 1985 catch values.

[d]The sport catches have not been deducted from the escapement estimates (Note: the sport fishery occurrs above the Chignik River weir.); the numbers of age .1 and .2 chinnok for 1972, 1980, 1985, and 1986 are calaculated from the same year age data, while the values for the others years were expanded based a 20.5% average composition of marine age .1 and .2 chinook from 1972, 1980, 1985, and 1986 data.

Table 3. Chignik River chinook salmon return by age and escapement year, 1966-86.

Year	Escap.	Age 1.0	1.1	1.2	1.3	1.4	2.3	1.5	Total Return	Return per Spawner
1966	984	0	227	688	1,481	735	0	19	3,149	3.2
1967	1,837	0	235	712	1,180	766	18	14	2,925	1.6
1968	1,208	0	243	393	536	557	13	20	1,764	1.5
1969	705	0	184	258	390	809	19	20	1,679	2.4
1970	3,095	0	88	187	566	816	19	21	1,697	0.5
1971	2,466	0	64	272	571	826	19	36	1,788	0.7
1972	1,853	0	93	274	578	1,451	33	30	2,460	1.3
1973	984	0	94	278	1,016	1,206	28	43	2,664	2.7
1974	795	0	95	488	844	1,710	39	55	3,231	4.1
1975	1,053	0	167	406	1,197	2,198	51	94	4,111	3.9
1976	831	0	139	575	1,538	3,754	87	89	6,182	7.4
1977	954	0	197	739	2,628	3,572	82	130	7,349	7.7
1978	1,437	0	253	1,263	2,501	5,222	121	0	9,358	6.5
1979	1,276	0	432	1,201	3,655	3,106	0	138	8,533	6.7
1980	1,327	0	411	1,756	1,398	3,980	277	63	7,884	5.9
1981	1,936	0	601	388	1,786	2,512	58		5,345	2.8
1982	2,914	0	466	415	1,759					
1983	2,264	0	0	845					average	3.7
1984	7,033	0	289							
1985	3,338	0								
1986	3,446									

Table 4. Sockeye salmon weekly and cumulative escapement counts through the Chignik River weir and weekly catches in the Chignik Management Area and interception fisheries, 1986.

Stat. Week	Chignik Escapement		Chignik Management Area Districts						Interception Areas		Total Catch
	Weekly	Cum.	Chignik Bay	Central	Eastern	Western	Perryville	Totals	Cape Igvak	Stepovak/Balboa/ Beaver Bays	
22	228	228	0	0	0	0	0	0	0	0	0
23	3,419	3,647	0	0	0	0	0	0	0	0	0
24	93,627	97,274	56,755	2,959	0	0	0	59,714	0	0	59,714
25	120,000	217,274	342,234	40,059	75	0	0	382,368	33,059	46,963	462,390
26	122,353	339,627	150,685	27,815	0	0	0	178,500	79,275	0	257,775
27	122,353	461,980	266,887	31,903	0	100	0	298,890	0	1,802	300,692
28	105,807	567,787	223,422	19,425	3,931	19,470	1,639	267,887	19,330	36,754	323,971
29	65,881	633,668	79,004	11,524	2,015	9,370	431	102,344	43,823	23,807	169,974
30	55,214	688,882	139,961	17,502	140	5,727	4,160	167,490	12,529	8,670	188,689
31	36,851	725,733	59,951	27,025	257	7,389	6,483	101,105	0	18,738	119,843
32	11,334	737,067	23,689	3,706	2	763	3,979	32,139	0	8,786	40,925
33	6,678	743,745	14,504	756	0	864	4,442	20,566	0	0	20,566
34	6,678	750,423	9,944	170	0	679	1,854	12,647	0	0	12,647
35	6,678	757,101	8,065	40	0	0	4	8,109	0	0	8,109
36	6,678	763,779	9,966	0	4	0	0	9,970	0	832	10,802
37	6,678	770,457	3,720	0	0	0	0	3,720	0	695	4,415
38	2,862	773,319	385	0	0	0	0	385	0	371	756
39	0	773,319	0	0	0	0	0	0	0	0	0
40	0	773,319	0	0	0	0	0	0	0	0	0
Totals	773,319		1,389,172	182,884	6,424	44,362	22,992	1,645,834	188,016	147,418	1,981,268

Table 5. Age composition of the Black Lake and Chignik Lake sockeye runs, 1986.

Stock	0.3	1.2	1.3	1.4	2.1	2.2	2.3	2.4	3.2	3.3	Total
Black Lake	2,466	171,996	930,556	1,083	2,446	75,882	748,678	414	1,933	635	1,936,091
	0.13%	8.88%	48.06%	0.06%	0.13%	3.92%	38.67%	0.02%	0.10%	0.03%	
Chignik Lake	1,040	51,174	230,102	456	3,872	74,620	452,319	1,443	2,852	618	818,496
	0.13%	6.25%	28.11%	0.06%	0.47%	9.12%	55.26%	0.18%	0.35%	0.08%	
Combined Runs	3,506	223,170	1,160,658	1,539	6,319	150,502	1,200,998	1,857	4,785	1,253	2,754,587
	0.13%	8.10%	42.14%	0.06%	0.23%	5.46%	43.60%	0.07%	0.17%	0.05%	

Table 6. Age composition of the sockeye catch samples from the Chignik Bay District, 1986.

Date	N	AGE 0.3	1.2	1.3	1.4	2.1	2.2	2.3	2.4	3.2	3.3
09-Jun	576	0	52	394	0	0	14	116	0	0	0
		0.0%	9.0%	68.4%	0.0%	0.0%	2.4%	20.1%	0.0%	0.0%	0.0%
15-Jun	525	0	48	308	0	1	7	161	0	0	0
		0.0%	9.1%	58.7%	0.0%	0.2%	1.3%	30.7%	0.0%	0.0%	0.0%
20-Jun	577	0	62	416	0	0	6	93	0	0	0
		0.0%	10.7%	72.1%	0.0%	0.0%	1.0%	16.1%	0.0%	0.0%	0.0%
24-Jun	593	0	98	410	0	1	17	67	0	0	0
		0.0%	16.5%	69.1%	0.0%	0.2%	2.9%	11.3%	0.0%	0.0%	0.0%
30-Jun	540	3	51	304	0	0	15	167	0	0	0
		0.6%	9.4%	56.3%	0.0%	0.0%	2.8%	30.9%	0.0%	0.0%	0.0%
02-Jul	246	0	19	133	1	0	13	78	0	1	1
		0.0%	7.7%	54.1%	0.4%	0.0%	5.3%	31.7%	0.0%	0.4%	0.4%
03-Jul	295	1	23	135	0	0	14	122	0	0	0
		0.3%	7.8%	45.8%	0.0%	0.0%	4.7%	41.4%	0.0%	0.0%	0.0%
06-Jul	542	2	61	138	3	0	25	313	0	0	0
		0.4%	11.3%	25.5%	0.6%	0.0%	4.6%	57.7%	0.0%	0.0%	0.0%
10-Jul	506	0	27	155	0	1	19	304	0	0	0
		0.0%	5.3%	30.6%	0.0%	0.2%	3.8%	60.1%	0.0%	0.0%	0.0%
14-Jul	539	3	25	130	0	0	27	352	0	2	0
		0.6%	4.6%	24.1%	0.0%	0.0%	5.0%	65.3%	0.0%	0.4%	0.0%
21-Jul	536	0	10	74	0	0	38	414	0	0	0
		0.0%	1.9%	13.8%	0.0%	0.0%	7.1%	77.2%	0.0%	0.0%	0.0%
29-Jul	490	0	24	31	0	1	58	373	1	2	0
		0.0%	4.9%	6.3%	0.0%	0.2%	11.8%	76.1%	0.2%	0.4%	0.0%
07-Aug	281	0	6	9	0	5	57	193	3	6	2
		0.0%	2.1%	3.2%	0.0%	1.8%	20.3%	68.7%	1.1%	2.1%	0.7%
12-Aug	518	0	18	17	0	17	156	299	4	6	1
		0.0%	3.5%	3.3%	0.0%	3.3%	30.1%	57.7%	0.8%	1.2%	0.2%

Table 7. Daily and cumulative sockeye escapement, catch, and run for the Chignik system, 1986. All figures are adjusted to Chignik Lagoon District migration time.

DATE	Daily			Cumulative		
	Escap.	Catch	Run	Escap.	Catch	Run
31-May	228	0	228	228	0	228
01-Jun	0	0	0	228	0	228
02-Jun	78	0	78	306	0	306
03-Jun	27	0	27	333	0	333
04-Jun	408	0	408	741	0	741
05-Jun	770	0	770	1,511	0	1,511
06-Jun	2,136	0	2,136	3,647	0	3,647
07-Jun	1,567	0	1,567	5,214	0	5,214
08-Jun	1,244	0	1,244	6,458	0	6,458
09-Jun	9,897	200	10,097	16,355	200	16,555
10-Jun	18,264	0	18,264	34,619	200	34,819
11-Jun	32,295	0	32,295	66,914	200	67,114
12-Jun	15,360	646	16,006	82,274	846	83,120
13-Jun	15,000	1,894	16,894	97,274	2,740	100,014
14-Jun	5,000	54,015	59,015	102,274	56,755	159,029
15-Jun	5,000	87,844	92,844	107,274	144,599	251,873
16-Jun	5,000	51,362	56,362	112,274	195,961	308,235
17-Jun	20,000	28,032	48,032	132,274	223,993	356,267
18-Jun	40,000	3,149	43,149	172,274	227,142	399,416
19-Jun	30,000	84,119	114,119	202,274	311,261	513,535
20-Jun	15,000	97,281	112,281	217,274	408,542	625,816
21-Jun	17,479	46,333	63,812	234,753	454,875	689,628
22-Jun	17,479	7,547	25,026	252,232	462,422	714,654
23-Jun	17,479	98,761	116,240	269,711	561,183	830,894
24-Jun	17,479	62,460	79,939	287,190	623,643	910,833
25-Jun	17,479	61,521	79,000	304,669	685,164	989,833
26-Jun	17,479	15,440	32,919	322,148	700,604	1,022,752
27-Jun	17,479	7,703	25,182	339,627	708,307	1,047,934
28-Jun	17,479	9,934	27,413	357,106	718,241	1,075,347
29-Jun	17,479	14,943	32,422	374,585	733,184	1,107,769
30-Jun	17,479	44,025	61,504	392,064	777,209	1,169,273
01-Jul	17,479	113,506	130,985	409,543	890,715	1,300,258
02-Jul	17,479	60,114	77,593	427,022	950,829	1,377,851
03-Jul	17,479	44,659	62,138	444,501	995,488	1,439,989
04-Jul	17,479	40,810	58,289	461,980	1,036,298	1,498,278
05-Jul	17,479	32,984	50,463	479,459	1,069,282	1,548,741
06-Jul	17,479	32,440	49,919	496,938	1,101,722	1,598,660
07-Jul	20,114	9,252	29,366	517,052	1,110,974	1,628,026
08-Jul	39,188	6,420	45,608	556,240	1,117,394	1,673,634
09-Jul	7,592	92,836	100,428	563,832	1,210,230	1,774,062
10-Jul	1,545	41,869	43,414	565,377	1,252,099	1,817,476

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Table 7. (page 2 of 3)

DATE	Daily			Cumulative		
	Escap.	Catch	Run	Escap.	Catch	Run
11-Jul	2,410	42,083	44,493	567,787	1,294,182	1,861,969
12-Jul	929	42,264	43,193	568,716	1,336,446	1,905,162
13-Jul	1,071	40,715	41,786	569,787	1,377,161	1,946,948
14-Jul	2,046	45,916	47,962	571,833	1,423,077	1,994,910
15-Jul	2,401	54,359	56,760	574,234	1,477,436	2,051,670
16-Jul	6,039	17,091	23,130	580,273	1,494,527	2,074,800
17-Jul	16,649	10,424	27,073	596,922	1,504,951	2,101,873
18-Jul	36,746	15,040	51,786	633,668	1,519,991	2,153,659
19-Jul	29,150	10,225	39,375	662,818	1,530,216	2,193,034
20-Jul	7,968	53,071	61,039	670,786	1,583,287	2,254,073
21-Jul	2,933	35,464	38,397	673,719	1,618,751	2,292,470
22-Jul	4,427	41,822	46,249	678,146	1,660,573	2,338,719
23-Jul	2,083	21,267	23,350	680,229	1,681,840	2,362,069
24-Jul	2,257	28,445	30,702	682,486	1,710,285	2,392,771
25-Jul	6,396	31,173	37,569	688,882	1,741,458	2,430,340
26-Jul	17,223	8,672	25,895	706,105	1,750,130	2,456,235
27-Jul	14,629	2,243	16,872	720,734	1,752,373	2,473,107
28-Jul	1,698	25,522	27,220	722,432	1,777,895	2,500,327
29-Jul	445	23,396	23,841	722,877	1,801,291	2,524,168
30-Jul	954	20,782	21,736	723,831	1,822,073	2,545,904
31-Jul	816	18,150	18,966	724,647	1,840,223	2,564,870
01-Aug	1,086	15,265	16,351	725,733	1,855,488	2,581,221
02-Aug	5,610	9,989	15,599	731,343	1,865,477	2,596,820
03-Aug	954	3,704	4,658	732,297	1,869,181	2,601,478
04-Aug	954	11,369	12,323	733,251	1,880,550	2,613,801
05-Aug	954	11,522	12,476	734,205	1,892,072	2,626,277
06-Aug	954	11,255	12,209	735,159	1,903,327	2,638,486
07-Aug	954	8,516	9,470	736,113	1,911,843	2,647,956
08-Aug	954	1,959	2,913	737,067	1,913,802	2,650,869
09-Aug	954	3,950	4,904	738,021	1,917,752	2,655,773
10-Aug	954	2,211	3,165	738,975	1,919,963	2,658,938
11-Aug	954	4,763	5,717	739,929	1,924,726	2,664,655
12-Aug	954	6,891	7,845	740,883	1,931,617	2,672,500
13-Aug	954	4,691	5,645	741,837	1,936,308	2,678,145
14-Aug	954	3,072	4,026	742,791	1,939,380	2,682,171
15-Aug	954	1,182	2,136	743,745	1,940,562	2,684,307
16-Aug	954	1,591	2,545	744,699	1,942,153	2,686,852
17-Aug	954	1,293	2,247	745,653	1,943,446	2,689,099
18-Aug	954	3,259	4,213	746,607	1,946,705	2,693,312
19-Aug	954	3,422	4,376	747,561	1,950,127	2,697,688
20-Aug	954	2,243	3,197	748,515	1,952,370	2,700,885
21-Aug	954	3,241	4,195	749,469	1,955,611	2,705,080
22-Aug	954	719	1,673	750,423	1,956,330	2,706,753

-Continued-

Table 7. (page 3 of 3)

DATE	Daily			Cumulative		
	Escap.	Catch	Run	Escap.	Catch	Run
23-Aug	954	626	1,580	751,377	1,956,956	2,708,333
24-Aug	954	87	1,041	752,331	1,957,043	2,709,374
25-Aug	954	158	1,112	753,285	1,957,201	2,710,486
26-Aug	954	3,801	4,755	754,239	1,961,002	2,715,241
27-Aug	954	2,298	3,252	755,193	1,963,300	2,718,493
28-Aug	954	1,991	2,945	756,147	1,965,291	2,721,438
29-Aug	954	0	954	757,101	1,965,291	2,722,392
30-Aug	954	0	954	758,055	1,965,291	2,723,346
31-Aug	954	4	958	759,009	1,965,295	2,724,304
01-Sep	954	3,732	4,686	759,963	1,969,027	2,728,990
02-Sep	954	2,333	3,287	760,917	1,971,360	2,732,277
03-Sep	954	2,056	3,010	761,871	1,973,416	2,735,287
04-Sep	954	1,849	2,803	762,825	1,975,265	2,738,090
05-Sep	954	0	954	763,779	1,975,265	2,739,044
06-Sep	954	206	1,160	764,733	1,975,471	2,740,204
07-Sep	954	553	1,507	765,687	1,976,024	2,741,711
08-Sep	954	716	1,670	766,641	1,976,740	2,743,381
09-Sep	954	977	1,931	767,595	1,977,717	2,745,312
10-Sep	954	1,111	2,065	768,549	1,978,828	2,747,377
11-Sep	954	989	1,943	769,503	1,979,817	2,749,320
12-Sep	954	0	954	770,457	1,979,817	2,750,274
13-Sep	954	157	1,111	771,411	1,979,974	2,751,385
14-Sep	954	193	1,147	772,365	1,980,167	2,752,532
15-Sep	954	359	1,313	773,319	1,980,526	2,753,845
16-Sep	0	344	344	773,319	1,980,870	2,754,189
17-Sep	0	27	27	773,319	1,980,897	2,754,216
18-Sep	0	371	371	773,319	1,981,268	2,754,587
19-Sep	0	0	0	773,319	1,981,268	2,754,587
20-Sep	0	0	0	773,319	1,981,268	2,754,587

Table 8. Chignik Management Area commercial salmon catch and effort by district and statistical week, 1986.

DISTRICT	STAT. WEEK	LANDINGS	CATCH					
			CHINOOK	SOCKEYE	PINK	CHUM	COHO	TOTAL
Chignik Bay	24	102	0	56,755	0	0	0	56,755
	25	444	38	342,234	10	38	0	342,320
	26	245	95	150,685	10	50	0	150,840
	27	420	939	266,887	222	664	10	268,722
	28	356	910	223,422	584	261	111	225,288
	29	211	232	79,004	978	199	11	80,424
	30	399	196	139,961	16,557	3,189	299	160,202
	31	264	97	59,951	45,938	2,038	150	108,174
	32	188	41	23,689	61,686	5,230	191	90,837
	33	153	21	14,504	49,244	3,716	1,408	68,893
	34	143	14	9,944	13,618	2,458	6,564	32,598
	35	131	8	8,065	2,173	202	18,601	29,049
	36	166	1	9,966	223	88	25,400	35,678
	37	59	0	3,720	21	33	6,892	10,666
	38	12	0	385	0	1	560	946
	Totals	3,293	2,592	1,389,172	191,264	18,167	60,197	1,661,392
Central	24	12	0	2,959	0	0	0	2,959
	25	69	11	40,059	285	786	0	41,141
	26	40	2	27,815	722	1,385	0	29,924
	27	70	12	31,903	809	2,468	18	35,210
	28	51	7	19,425	5,953	2,216	62	27,663
	29	27	4	11,524	1,405	1,997	79	15,009
	30	61	4	17,502	9,359	6,962	574	34,401

-Continued-

Table 8. (page 2 of 4)

DISTRICT	STAT. WEEK	LANDINGS	CATCH				
			CHINOOK	SOCKEYE	PINK	CHUM	COHO	TOTAL
Central (cont.)	30	61	4	17,502	9,359	6,962	574	34,401
	31	69	8	27,025	15,543	10,491	1,402	54,469
	32	38	9	3,706	7,419	2,439	508	14,081
	33	12	0	756	2,295	641	192	3,884
	34	5	1	170	321	104	134	730
	35	1	0	40	16	13	58	127
	36	0	0	0	0	0	0	0
	37	0	0	0	0	0	0	0
	38	0	0	0	0	0	0	0
	Totals	455	58	182,884	44,127	29,502	3,027	259,598
Eastern	24	0	0	0	0	0	0	0
	25	1	0	75	0	0	0	75
	26	0	0	0	0	0	0	0
	27	0	0	0	0	0	0	0
	28	5	7	3,931	1,541	415	0	5,894
	29	10	2	2,015	1,596	162	4	3,779
	30	2	0	140	821	180	0	1,141
	31	8	5	257	15,404	7,732	48	23,446
	32	11	0	2	30,273	9,391	28	39,694
	33	0	0	0	0	0	0	0
	34	0	0	0	0	0	0	0
	35	0	0	0	0	0	0	0
	36	2	0	4	0	0	953	957

-Continued-

Table 8. (page 3 of 4)

DISTRICT	STAT. WEEK	LANDINGS	CATCH				
			CHINOOK	SOCKEYE	PINK	CHUM	COHO	TOTAL
Eastern (cont.)	37	0	0	0	0	0	0	0
	38	0	0	0	0	0	0	0
	Totals	39	14	6,424	49,635	17,880	1,033	74,986
Western	24	0	0	0	0	0	0	0
	25	0	0	0	0	0	0	0
	26	0	0	0	0	0	0	0
	27	1	3	100	41	32	6	182
	28	58	239	19,470	6,267	18,738	4,092	48,806
	29	12	47	9,370	3,395	5,397	2,915	21,124
	30	27	14	5,727	26,097	9,393	7,494	48,725
	31	54	19	7,389	121,621	23,547	11,131	163,707
	32	35	8	763	20,915	7,595	2,296	31,577
	33	41	5	864	16,683	7,294	3,709	28,555
	34	19	15	679	5,774	2,074	2,083	10,625
	35	0	0	0	0	0	0	0
	36	0	0	0	0	0	0	0
	37	0	0	0	0	0	0	0
	38	0	0	0	0	0	0	0
	Totals	247	350	44,362	200,793	74,070	33,726	353,301

-Continued-

Table 8. (page 4 of 4)

DISTRICT	STAT. WEEK	LANDINGS	CATCH				
			CHINOOK	SOCKEYE	PINK	CHUM	COHO	TOTAL
Perryville	24	0	0	0	0	0	0	0
	25	0	0	0	0	0	0	0
	26	0	0	0	0	0	0	0
	27	0	0	0	0	0	0	0
	28	7	4	1,639	430	982	215	3,270
	29	1	0	431	190	108	7	736
	30	3	6	4,160	8,991	2,506	2,971	18,634
	31	36	5	6,483	77,360	13,529	11,996	109,373
	32	10	0	3,979	18,335	6,746	365	29,425
	33	57	6	4,442	48,464	11,055	1,255	65,222
	34	30	2	1,854	7,526	2,083	1,836	13,301
	35	1	0	4	10	12	5	31
	36	0	0	0	0	0	0	0
	37	0	0	0	0	0	0	0
	38	0	0	0	0	0	0	0
	Totals	145	23	22,992	161,306	37,021	18,650	239,992
All Districts		4,179	3,037	1,645,834	647,125	176,640	116,633	2,589,269

Table 9. Age composition of the Chignik Bay District coho commercial catch, 1986.

Sex	Sample Size		AGE GROUP 1.1	2.1	3.1	Total
Male	209	Percent	7.2	90.9	1.9	100.0
		Numbers	3,089	39,125	824	43,037
		SE	780	1,686	411	
Female	76	Percent	7.9	89.5	2.6	100.0
		Numbers	1,355	15,354	452	17,160
		SE	524	1,541	305	
All Fish	291	Percent	7.2	90.7	2.1	100.0
		Numbers	4,344	54,612	1,241	60,197
		SE	915	1,026	502	

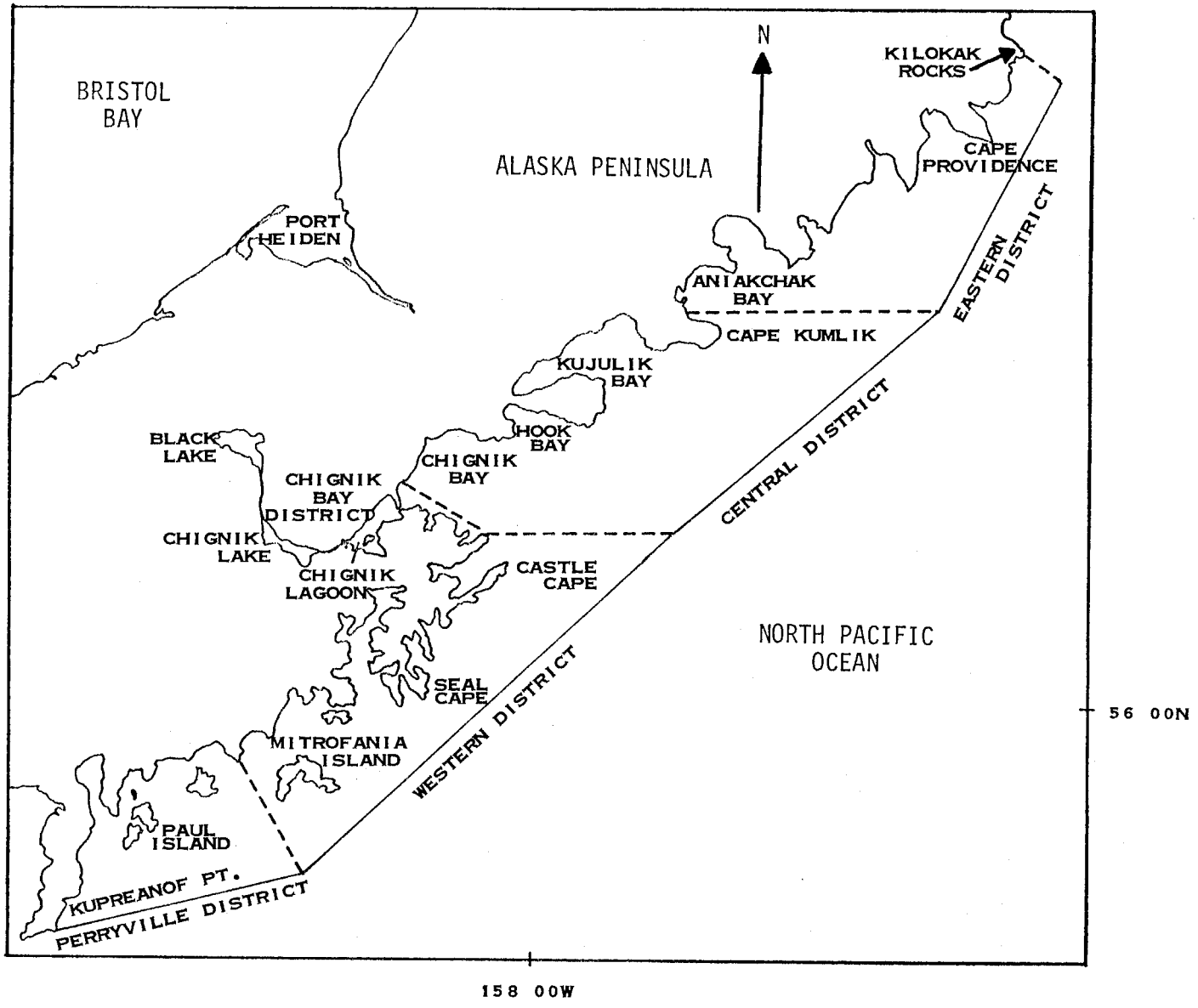

Figure 1. Map of the Chignik Management Area with the statistical fishing districts and some prominent landmarks identified.

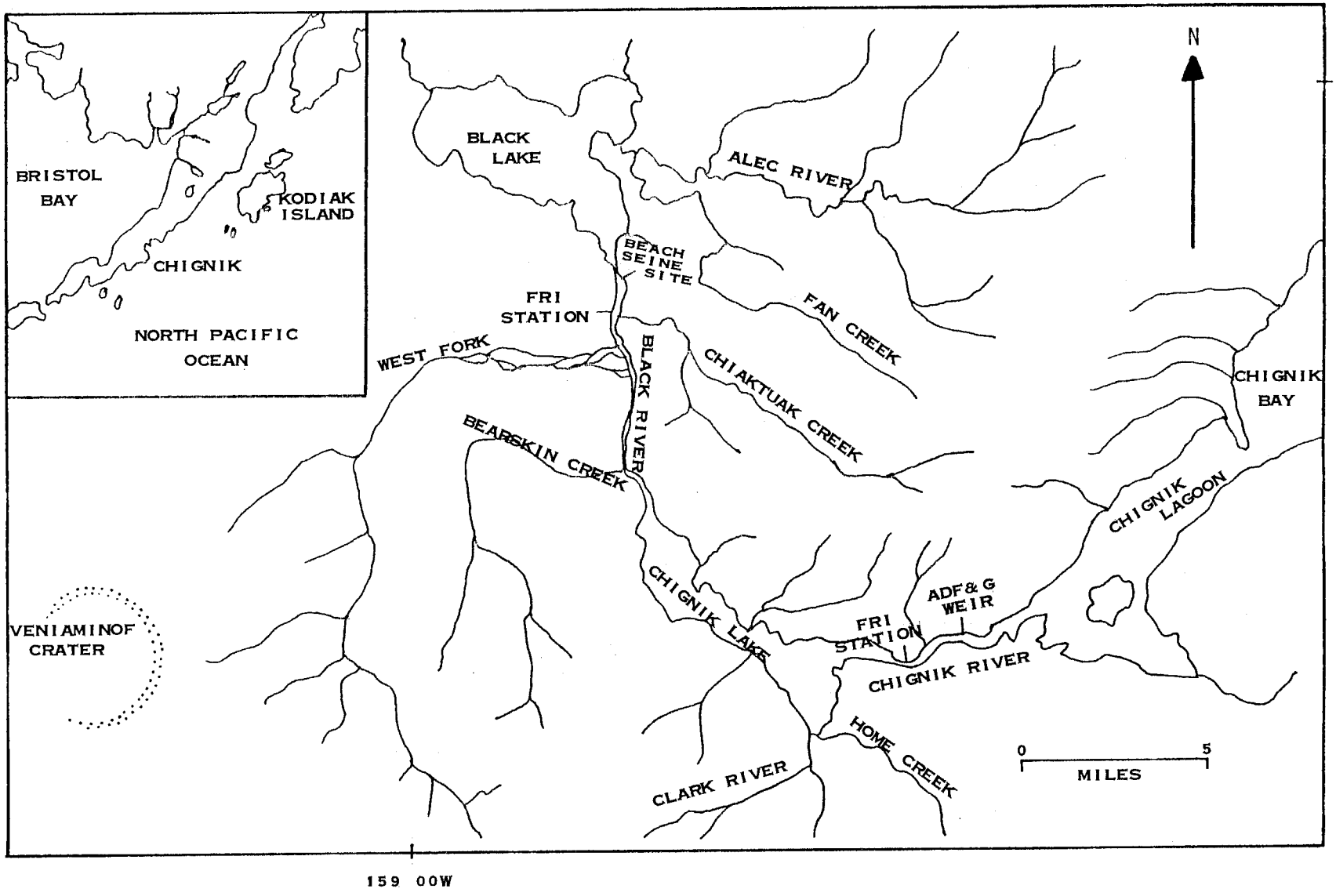

Figure 2. Map of the Chignik River drainage.

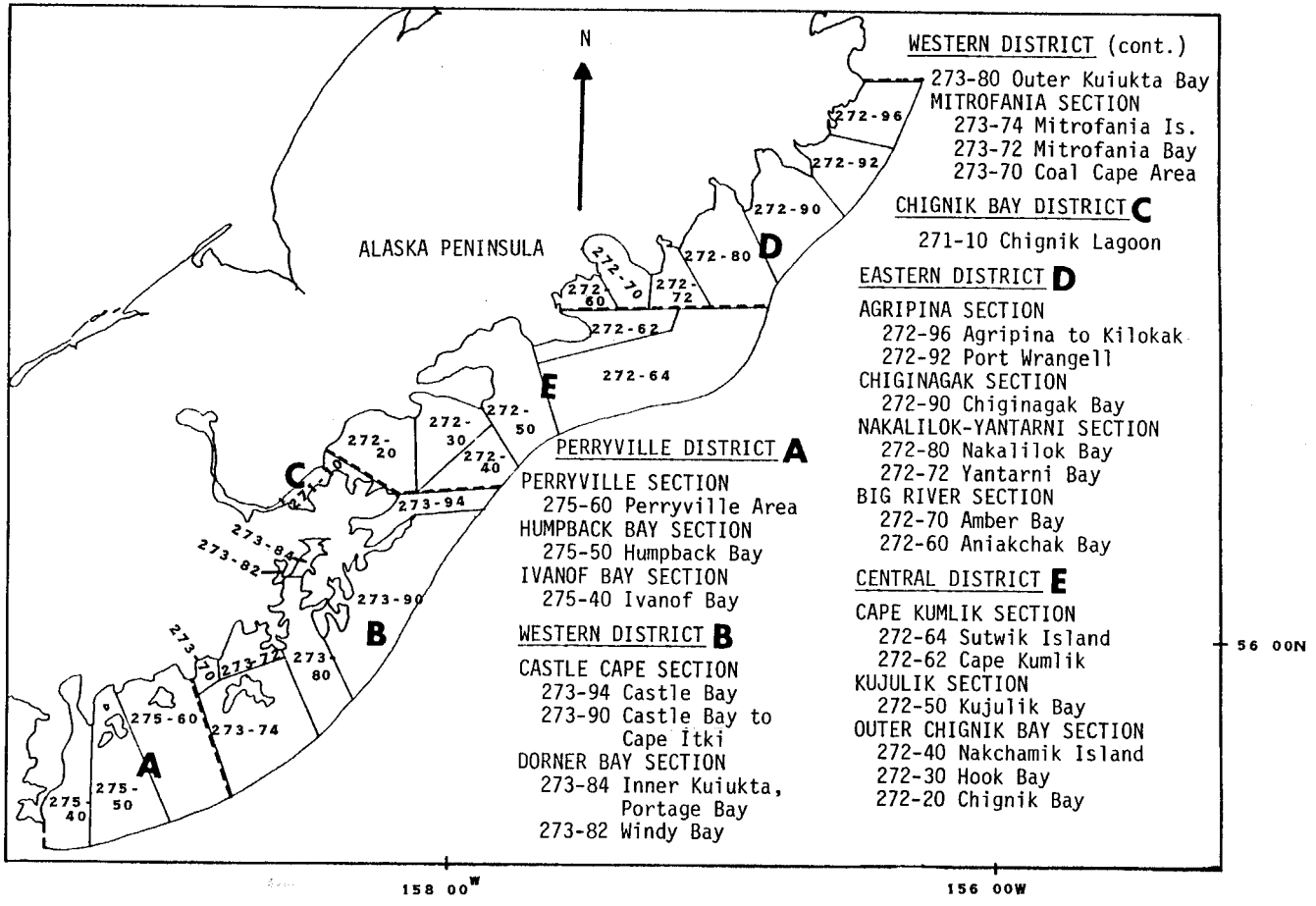

Figure 3. Map of the Chignik Management Area with the statistical fishing areas identified.

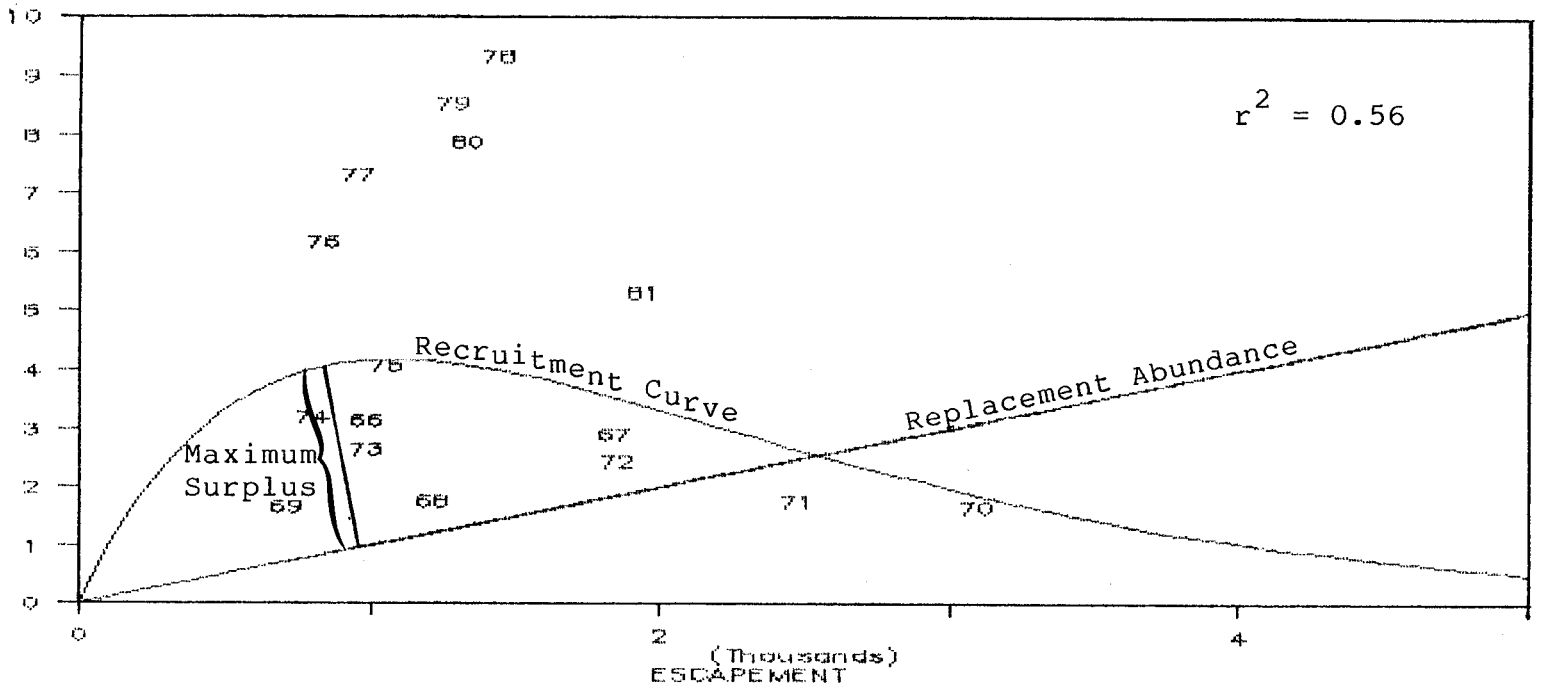

Figure 4. Relationship between escapement and return for Chignik River chinook salmon using equation 11.9 in Ricker (1958).

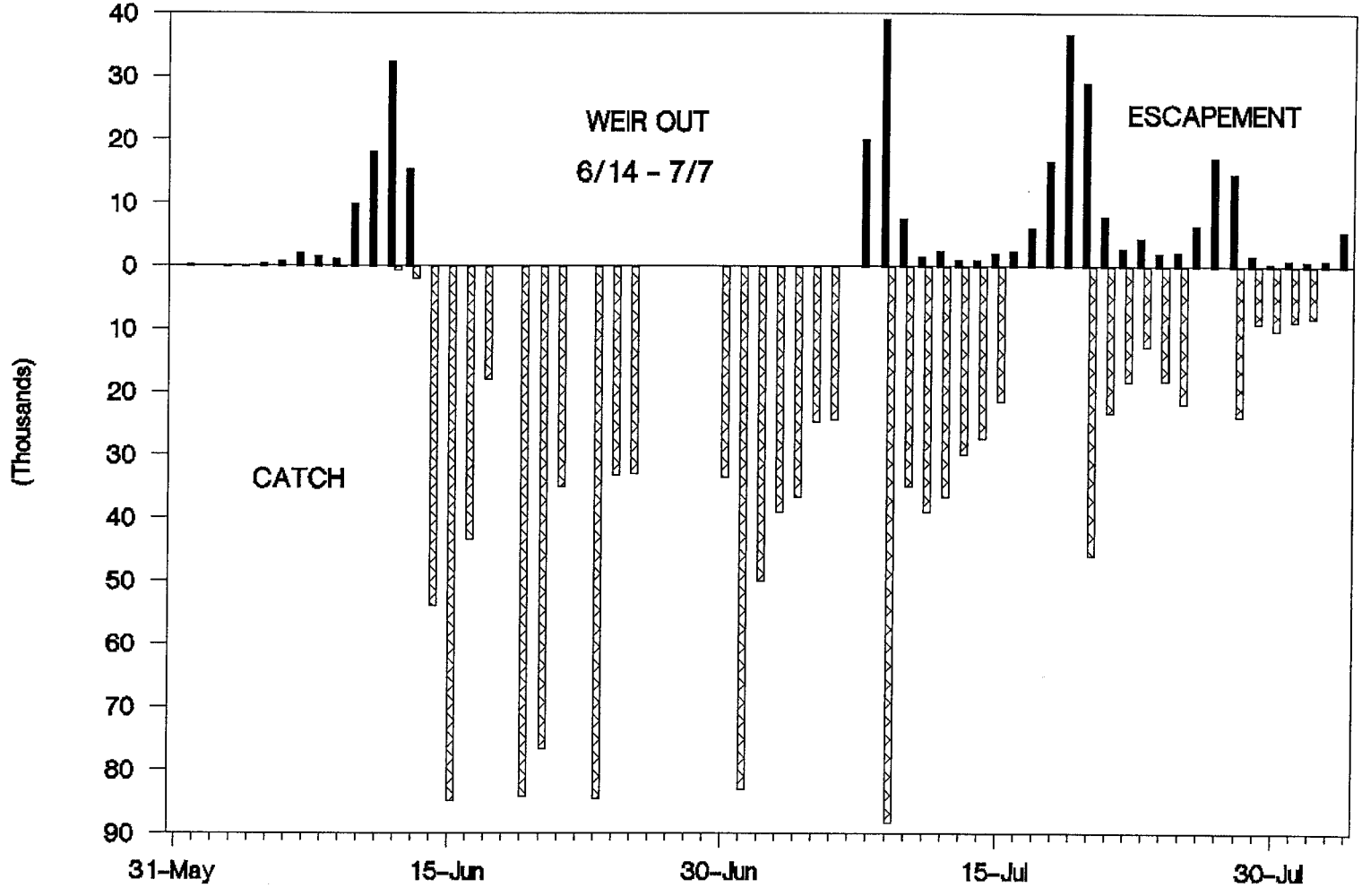

Figure 5. A comparison of the daily sockeye escapement counts at the Chignik River weir with the catches of the Chignik Bay District.

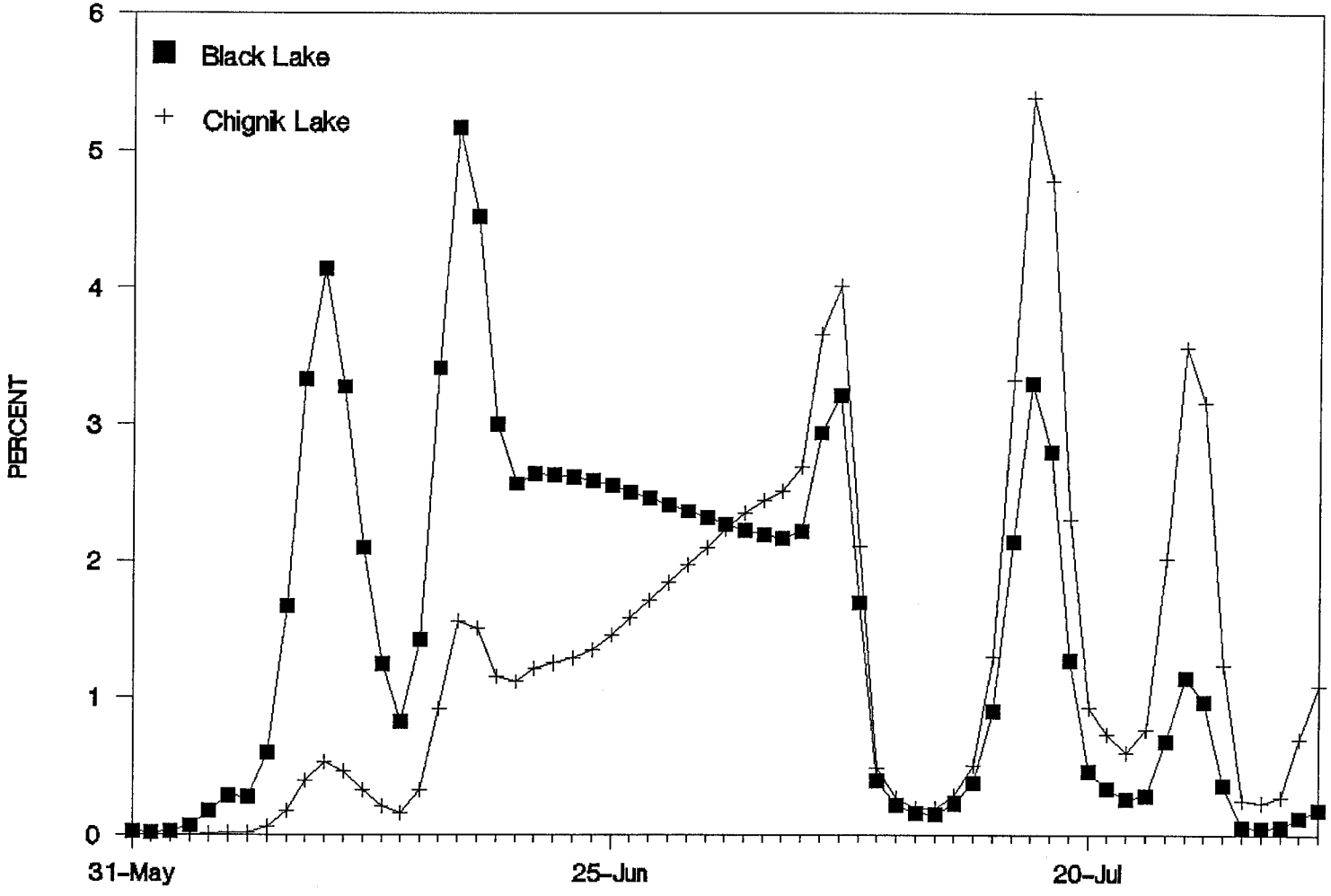

Figure 6. Daily 1986 Black Lake and Chignik Lake sockeye escapements through the Chignik River weir.

APPENDICES

Appendix A.1. 1986 statistical weeks.

STATISTICAL WEEK	CALENDAR DATES	STATISTICAL WEEK	CALENDAR DATES
1	01/01 to 01/04	27	06/29 to 07/05
2	01/05 to 01/11	28	07/06 to 07/12
3	01/12 to 01/18	29	07/13 50 07/19
4	01/19 to 01/25	30	07/20 to 07/26
5	01/26 to 02/01	31	07/27 to 08/02
6	02/02 to 02/08	32	08/03 to 08/09
7	02/09 to 02/15	33	08/10 to 08/16
8	02/16 to 02/22	34	08/17 to 08/23
9	02/23 to 03/01	35	08/24 to 08/30
10	03/02 to 03/08	36	08/31 to 09/06
11	03/09 to 03/15	37	09/07 to 09/13
12	03/16 to 03/22	38	09/14 to 09/20
13	03/23 to 03/29	39	09/21 to 09/27
14	03/30 to 04/05	40	09/28 to 10/04
15	04/06 to 04/12	41	10/05 to 10/11
16	04/13 to 04/19	42	10/12 to 10/18
17	04/20 to 04/26	43	10/19 to 10/25
18	04/27 to 05/03	44	10/26 to 11/01
19	05/04 to 05/10	45	11/02 to 11/08
20	05/11 to 05/17	46	11/09 to 11/15
21	05/18 to 05/24	47	11/16 to 11/22
22	05/25 to 05/31	48	11/23 to 11/29
23	06/01 to 06/07	49	11/30 to 12/06
24	06/08 to 06/14	50	12/07 to 12/13
25	06/15 to 06/21	51	12/14 to 12/20
26	06/22 to 06/28	52	12/21 to 12/27

Appendix A.2. Chignik Bay District commercial catch and effort by subdistrict and week, 1986.

SUB-DISTRICT	STAT. WEEK	EFFORT			CHINOOK		SOCKEYE		PINK		CHUM		COHO	
		HOURS	BOATS	LANDINGS	DAILY	CUM.	DAILY	CUM.	DAILY	CUM.	DAILY	CUM.	DAILY	CUM.
271-10	24	24	87	102	0	0	56,755	56,755	0	0	0	0	0	0
	25	114	93	444	38	38	342,234	398,989	10	10	38	38	0	0
	26	61	87	245	95	133	150,685	549,674	10	20	50	88	0	0
	27	114	92	420	939	1,072	266,887	816,561	222	242	664	752	10	10
	28	90	92	356	910	1,982	223,422	1,039,983	584	826	261	1,013	111	121
	29	66	80	211	232	2,214	79,004	1,118,987	978	1,804	199	1,212	11	132
	30	134	82	399	196	2,410	139,961	1,258,948	16,557	18,361	3,189	4,401	299	431
	31	104	78	264	97	2,507	59,951	1,318,899	45,938	64,299	2,038	6,439	150	581
	32	73	72	188	41	2,548	23,689	1,342,588	61,686	125,985	5,230	11,669	191	772
	33	75	65	153	21	2,569	14,504	1,357,092	49,244	175,229	3,716	15,385	1,408	2,180
	34	78	62	143	14	2,583	9,944	1,367,036	13,618	188,847	2,458	17,843	6,564	8,744
	35	75	59	131	8	2,591	8,065	1,375,101	2,173	191,020	202	18,045	18,601	27,345
	36	96	55	166	1	2,592	9,966	1,385,067	223	191,243	88	18,133	25,400	52,745
	37	96	30	59	0	2,592	3,720	1,388,787	21	191,264	33	18,166	6,892	59,637
	38	96	9	12	0	2,592	385	1,389,172	0	191,264	1	18,167	560	60,197
Totals		1,296	103	3,293	2,592		1,389,172		191,264		18,167		60,197	

Appendix A.3. Central District commercial catch and effort by subdistrict and week, 1986.

SUB-DISTRICT	STAT. WEEK	EFFORT			CHINOOK		SOCKEYE		PINK		CHUM		COHO	
		HOURS	BOATS	LANDINGS	DAILY	CUM.	DAILY	CUM.	DAILY	CUM.	DAILY	CUM.	DAILY	CUM.
272-20	24-26	199	0	0	0	0	0	0	0	0	0	0	0	0
	27	114	1	1	0	0	676	676	0	0	0	0	0	0
	28-29	146	0	0	0	0	0	676	0	0	0	0	0	0
	30	134	2	2	0	0	280	956	1,070	1,070	440	440	159	159
	31	104	2	2	0	0	17	973	297	1,367	226	666	31	190
	32	73	1	1	0	0	13	986	110	1,477	27	693	6	196
	33-38	444	0	0	0	0	0	986	0	1,477	0	693	0	196
	Totals	1,214	6	6	0		986		1,477		693		196	
272-30	24	24	4	4	0	0	1,035	1,035	0	0	0	0	0	0
	25	114	8	31	2	2	15,575	16,610	79	79	420	420	0	0
	26	61	9	19	0	2	15,309	31,919	233	312	701	1,121	0	0
	27	114	14	25	2	4	12,465	44,384	103	415	1,069	2,190	5	5
	28	48	13	23	3	7	9,184	53,568	210	625	761	2,951	8	13
	29	98	10	18	1	8	8,219	61,787	644	1,269	1,074	4,025	43	56
	30	134	11	36	0	8	11,077	72,864	3,629	4,898	4,485	8,510	230	286
	31	104	14	42	3	11	15,130	87,994	9,310	14,208	4,467	12,977	794	1,080
	32	73	16	31	9	20	2,727	90,721	6,535	20,743	1,940	14,917	427	1,507
	33	75	6	12	0	20	756	91,477	2,295	23,038	641	15,558	192	1,699
	34	78	3	5	1	21	170	91,647	321	23,359	104	15,662	134	1,833
	35	75	1	1	0	21	40	91,687	16	23,375	13	15,675	58	1,891
	36-38	216	0	0	0	21	0	91,687	0	23,375	0	15,675	0	1,891
	Totals	1,214	33	247	21		91,687		23,375		15,675		1,891	

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Appendix A.3. (p 2 of 3)

SUB-DISTRICT	STAT. WEEK	EFFORT			CHINOOK		SOCKEYE		PINK		CHUM		COHO	
		HOURS	BOATS	LANDINGS	DAILY	CUM.	DAILY	CUM.	DAILY	CUM.	DAILY	CUM.	DAILY	CUM.
272-40	24-26	199	0	0	0	0	0	0	0	0	0	0	0	0
	27	114	1	1	0	0	160	160	125	125	267	267	0	0
	28-38	901	0	0	0	0	0	160	0	125	0	267	0	0
	Totals	1,214	1	1	0		160		125		267		0	
272-50	24	24	0	0	0	0	0	0	0	0	0	0	0	0
	25	114	4	9	0	0	8,122	8,122	48	48	143	143	0	0
	26	61	8	20	1	1	12,292	20,414	489	537	684	827	0	0
	27	114	11	34	5	6	16,084	36,498	498	1,035	1,042	1,869	11	11
	28	48	10	21	3	9	8,746	45,244	379	1,414	1,151	3,020	43	54
	29	98	4	7	3	12	3,209	48,453	487	1,901	662	3,682	30	84
	30	134	8	22	3	15	6,081	54,534	4,435	6,336	1,966	5,648	183	267
	31	104	7	25	5	20	11,878	66,412	5,936	12,272	5,798	11,446	577	844
	32	73	4	6	0	20	966	67,378	774	13,046	472	11,918	75	919
	33-38	444	0	0	0	20	0	67,378	0	13,046	0	11,918	0	919
	Totals	1,214	17	144	20		67,378		13,046		11,918		919	
272-62	24	24	8	8	0	0	1,924	1,924	0	0	0	0	0	0
	25	114	13	29	9	9	16,362	18,286	158	158	223	223	0	0
	26	61	1	1	1	10	214	18,500	0	158	0	223	0	0
	27	114	4	9	5	15	2,518	21,018	83	241	90	313	2	2
	28	48	2	7	1	16	1,495	22,513	5,364	5,605	304	617	11	13
	29	98	2	2	0	16	96	22,609	274	5,879	261	878	6	19

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Appendix A.3. (p 3 of 3)

SUB-DISTRICT	STAT. WEEK	EFFORT			CHINOOK		SOCKEYE		PINK		CHUM		COHO	
		HOURS	BOATS	LANDINGS	DAILY	CUM.	DAILY	CUM.	DAILY	CUM.	DAILY	CUM.	DAILY	CUM.
	30	134	1	1	1	17	64	22,673	225	6,104	71	949	2	21
	31-38	621	0	0	0	17	0	22,673	0	6,104	0	949	0	21
	Totals	1,214	18	57	17		22,673		6,104		949		21	
272-64	24-38	1,214	0	0	0	0	0	0	0	0	0	0	0	0
	Totals	1,214	0	0	0	0	0	0	0	0	0	0	0	0
ALL AREAS COMBINED		1,214		455	58		182,884		44,127		29,502		3,027	

Appendix A.4. Eastern District commercial catch and effort by subdistrict and week, 1986.

SUB-DISTRICT	STAT. WEEK	EFFORT			CHINOOK		SOCKEYE		PINK		CHUM		COHO	
		HOURS	BOATS	LANDINGS	DAILY	CUM.	DAILY	CUM.	DAILY	CUM.	DAILY	CUM.	DAILY	CUM.
272-60	24	24	0	0	0	0	0	0	0	0	0	0	0	0
	25	114	1	1	0	0	75	75						
	26	61	0	0	0	0	0	75	0	0	0	0	0	0
	27	90	0	0	0	0	0	75	0	0	0	0	0	0
	28	33	3	5	7	7	3,931	4,006	1,541	1,541	415	415	0	0
	29	98	4	10	2	9	2,015	6,021	1,596	3,137	162	577	4	4
	30	62	2	2	0	9	140	6,161	821	3,958	180	757	0	4
	31-38	303	0	0	0	9	0	6,161	0	3,958	0	757	0	4
Totals		785	6	18	9		6,161		3,958		757		4	
272-70	24-30	482	0	0	0	0	0	0	0	0	0	0	0	0
	31	30	2	2	0	0	38	38	1,557	1,557	416	416	0	0
	32-35	57	0	0	0	0	0	38	0	1,557	0	416	0	0
	36	72	1	2	0	0	4	42	0	1,557	0	416	953	953
	37-38	144	0	0	0	0	0	42						
Totals		785	2	4	0		42		1,557		416		953	
272-72	24-30	482	0	0	0	0	0	0	0	0	0	0	0	0
	31	30	1	1	4	4	113	113	534	534	334	334	24	24
	32-38	273	0	0	0	4	0	113	0	534	0	334	0	24
Totals		785	1	1	4		113		534		334		24	
272-80	24-30	482	0	0	0	0	0	0	0	0	0	0	0	0
	31	30	2	3	0	0	31	31	5,610	5,610	160	160	24	24

-Continued-

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SUB-DISTRICT	STAT. WEEK	EFFORT HOURS	EFFORT BOATS	EFFORT LANDINGS	CHINOOK DAILY	CHINOOK CUM.	SOCKEYE DAILY	SOCKEYE CUM.	PINK DAILY	PINK CUM.	CHUM DAILY	CHUM CUM.	COHO DAILY	COHO CUM.
	32	57	3	4	0	0	0	31	14,193	19,803	4,214	4,374	21	45
	33-38	216	0	0	0	0	0	31	0	19,803	0	4,374	0	45
	Totals	785	5	7	0		31		19,803		4,374		45	
272-90	24-30	482	0	0	0	0	0	0	0	0	0	0	0	0
	31	30	1	2	1	1	75	75	7,703	7,703	6,822	6,822	0	0
	32	57	6	7	0	1	2	77	16,080	23,783	5,177	11,999	7	7
	33-38	216	0	0	0	1	0	77	0	23,783	0	11,999	0	7
	Totals	785	6	9	1		77		23,783		11,999		7	
ALL AREAS COMBINED		785		39	14		6,424		49,635		17,880		1,033	

Appendix A.5. Western District commercial catch and effort by subdistrict and week, 1986.

SUB-DISTRICT	STAT. WEEK	EFFORT			CHINOOK		SOCKEYE		PINK		CHUM		COHO	
		HOURS	BOATS	LANDINGS	DAILY	CUM.	DAILY	CUM.	DAILY	CUM.	DAILY	CUM.	DAILY	CUM.
273-70	24-38	883	0	0	0	0	0	0	0	0	0	0	0	0
Totals		883	0	0	0	0	0	0	0	0	0	0	0	0
273-72	24-26	0	0	0	0	0	0	0	0	0	0	0	0	0
	27	24	1	1	3	3	100	100	41	41	32	32	6	6
	28	48	0	0	0	3	0	100	0	41	0	32	0	6
	29	129	0	0	0	3	0	100	0	41	0	32	0	6
	30	62	1	1	0	3	181	281	1,150	1,191	259	291	282	288
	31	99	5	6	1	4	1,733	2,014	23,625	24,816	3,495	3,786	2,580	2,868
	32-38	521	0	0	0	4	0	2,014	0	24,816	0	3,786	0	2,868
Totals		883	6	8	4		2,014		24,816		3,786		2,868	
273-74	24-27	24	0	0	0	0	0	0	0	0	0	0	0	0
	28	48	15	26	194	194	8,111	8,111	3,953	3,953	12,328	12,328	3,282	3,282
	29	129	4	7	37	231	3,718	11,829	2,809	6,762	4,886	17,214	2,763	6,045
	30	62	4	4	11	242	1,889	13,718	11,945	18,707	3,569	20,783	4,309	10,354
	31	99	13	25	6	248	3,577	17,295	67,432	86,139	10,019	30,802	5,088	15,442
	32	99	15	25	8	256	416	17,711	13,169	99,308	4,343	35,145	1,786	17,228
	33	96	11	27	5	261	649	18,360	12,547	111,855	5,146	40,291	3,031	20,259
	34	78	7	19	15	276	679	19,039	5,774	117,629	2,074	42,365	2,083	22,342
	34-38	290	0	0	0	276	0	19,039	0	117,629	0	42,365	0	22,342
Totals		925	35	133	276		19,039		117,629		42,365		22,342	

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SUB-DISTRICT	STAT. WEEK	EFFORT			CHINOOK		SOCKEYE		PINK		CHUM		COHO	
		HOURS	BOATS	LANDINGS	DAILY	CUM.	DAILY	CUM.	DAILY	CUM.	DAILY	CUM.	DAILY	CUM.
273-80	24-27	24	0	0	0	0	0	0	0	0	0	0	0	0
	28	48	10	11	10	10	5,835	5,835	394	394	593	593	23	23
	29	129	2	2	9	19	3,147	8,982	172	566	172	765	70	93
	30	62	1	1	0	19	405	9,387	75	641	38	803	0	93
	31	99	1	1	4	23	1	9,388	0	641	1,804	2,607	0	93
	32-38	563	0	0	0	23	0	9,388	0	641	0	2,607	0	93
	Totals	925	12	15	23		9,388		641		2,607		93	
273-84	24-30	263	0	0	0	0	0	0	0	0	0	0	0	0
	31	99	1	1	2	2	0	423	423	423	2,245	2,245	7	7
	32-38	521	0	0	0	2	0	0	0	423	0	2,245	0	7
	Totals	883	1	1	2		0	0	423		2,245		7	
273-90	24-27	24	0	0	0	0	0	0	0	0	0	0	0	0
	28	48	14	19	32	32	5,058	5,058	1,854	1,854	5,734	5,734	768	768
	29	129	2	2	1	33	2,379	7,437	191	2,045	135	5,869	17	785
	30	72	7	16	3	36	2,948	10,385	10,849	12,894	3,802	9,671	2,227	3,012
	31	134	6	11	6	42	1,633	12,018	25,955	38,849	4,468	14,139	3,029	6,041
	32	99	5	9	0	42	327	12,345	7,558	46,407	3,108	17,247	433	6,474
	33	75	8	13	0	42	215	12,560	4,136	50,543	2,148	19,395	612	7,086
	34-38	368	0	0	0	42	0	12,560	0	50,543	0	19,395	0	7,086
	Totals	949	27	70	42		12,560		50,543		19,395		7,086	

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Appendix A.5. (p 3 of 3)

SUB-DISTRICT	STAT. WEEK	EFFORT			CHINOOK		SOCKEYE		PINK		CHUM		COHO	
		HOURS	BOATS	LANDINGS	DAILY	CUM.	DAILY	CUM.	DAILY	CUM.	DAILY	CUM.	DAILY	CUM.
273-94	24-27	24	0	0	0	0	0	0	0	0	0	0	0	0
	28	48	2	2	3	3	466	466	66	66	83	83	19	19
	29	129	1	1	0	3	126	592	223	289	204	287	65	84
	30	72	3	5	0	3	304	896	2,078	2,367	1,725	2,012	676	760
	31	134	6	10	0	3	445	1,341	4,186	6,553	1,516	3,528	427	1,187
	32	99	1	1	0	3	20	1,361	188	6,741	144	3,672	77	1,264
	33	75	1	1	0	3	0	1,361	0	6,741	0	3,672	66	1,330
	34-38	368	0	0	0	3	0	1,361	0	6,741	0	3,672	0	1,330
Totals		949	8	20	3		1,361		6,741		3,672		1,330	
ALL AREAS COMBINED		949	89	247	350		44,362		200,793		74,070		33,726	

Appendix A.6. Perryville District commercial catch and effort by subdistrict and week, 1986.

SUB-DISTRICT	STAT. WEEK	EFFORT			CHINOOK		SOCKEYE		PINK		CHUM		COHO	
		HOURS	BOATS	LANDINGS	DAILY	CUM.	DAILY	CUM.	DAILY	CUM.	DAILY	CUM.	DAILY	CUM.
275-40	24-27	24	0	0	0	0	0	0	0	0	0	0	0	0
	28	48	3	4	1	1	1,398	1,398	290	290	812	812	151	151
	29	129	1	1	0	1	431	1,829	190	480	108	920	7	158
	30	62	3	3	6	7	4,160	5,989	8,991	9,471	2,506	3,426	2,971	3,129
	31	99	14	36	5	12	6,483	12,472	77,360	86,831	13,529	16,955	11,996	15,125
	32	99	8	10	0	12	3,979	16,451	18,335	105,166	6,746	23,701	365	15,490
	33	96	21	47	5	17	2,978	19,429	41,241	146,407	10,646	34,347	1,136	16,626
	34	78	8	20	0	17	1,376	20,805	5,237	151,644	1,779	36,126	1,587	18,213
	35	74	1	1	0	17	4	20,809	10	151,654	12	36,138	5	18,218
	36-38	216	0	0	0	17	0	20,809	0	151,654	0	36,138	0	18,218
Totals		925	30	122	17		20,809		151,654		36,138		18,218	
275-50	24-27	24	0	0	0	0	0	0	0	0	0	0	0	0
	28	48	3	3	3	3	241	241	140	140	170	170	64	64
	29-32	389	0	0	0	3	0	241	0	140	0	170	0	64
	33	96	4	10	1	4	1,464	1,705	7,223	7,363	409	579	119	183
	34	78	5	10	2	6	478	2,183	2,289	9,652	304	883	249	432
	35-38	290	0	0	0	6	0	2,183	0	9,652	0	883	0	432
Totals		925	8	23	6		2,183		9,652		883		432	
275-60	24-38	925	0	0	0	0	0	0	0	0	0	0	0	0
Totals		925	0	0	0		0		0		0		0	
ALL AREAS COMBINED		925		145	23		22,992		161,306		37,021		18,650	

Appendix B.1. Chinook daily and cumulative escapement counts through the Chignik River weir, 1986.

Stat. Week	Date	Daily	Cumulative	Stat. Week	Date	Daily	Cumulative
22-25	31-May thru 19-Jun	0	0		21-Jul	126	3114
25-28	20-Jun thru 07-Jul	1296	1296		22-Jul	96	3210
28	08-Jul	60	1356		23-Jul	108	3318
	09-Jul	360	1716		24-Jul	72	3390
	10-Jul	162	1878		25-Jul	24	3414
	11-Jul	60	1938		26-Jul	42	3456
	12-Jul	150	2088	31	27-Jul	12	3468
29	13-Jul	78	2166		28-Jul	24	3492
	14-Jul	108	2274		29-Jul	6	3498
	15-Jul	126	2400		30-Jul	6	3504
	16-Jul	78	2478		31-Jul	48	3552
	17-Jul	78	2556		01-Aug	18	3570
	18-Jul	84	2640		02-Aug	30	3600
	19-Jul	90	2730	32	03-Aug	12	3612
30	20-Jul	258	2988	32-40	4-Aug thru 30-Sept	39	3651

Appendix B.2. Age composition of the Chignik River chinook escapement for 1972, 1980, 1985, and 1986.

		Age							
Year	N	1.0	1.1	1.2	1.3	1.4	2.3	1.5	Source
1972	95	0.0	7.4	15.8	47.4	29.5	0.0	0.0	Burgner and Marshall (1974)
1980	41	0.0	4.9	31.7	26.8	34.1	0.0	2.4	Nicholson (1980)
1985	69	0.0	8.7	7.2	26.1	58.0	0.0	0.0	ADF&G (unpublished)
1986	48	0.0	0.0	6.3	27.1	60.4	4.2	2.1	ADF&G (unpublished)
	Average	0.0	5.2	15.3	31.8	45.5	1.1	1.1	

Appendix B.3. Mean length by age of the Chignik River chinook escapement, 1986.

	AGE CLASS					
	1.2	1.3	1.4	2.3	1.5	Total
Females						
Mean Length	0	868	915	943	0	903
SE	-	10	20	-	-	14
Range	0-0	850-895	783-1050	943-943	0-0	783-1050
Sample Size	0	5	12	1	0	18
Males						
Mean Length	553	778	946	865	1020	860
SE	15	46	33	-	-	39
Range	538-568	690-874	820-1115	865-865	999-1020	538-1115
Sample Size	2	4	9	1	1	17
All Fish						
Mean Length	553	836	924	904	1020	883
SE	15	24	17	39	-	19
Range	538-568	690-910	783-1115	865-943	999-1020	538-1115
Sample Size	2	10	23	2	1	38

Appendix B.4. Age composition of the Chignik sockeye catch by statistical week with catch time adjusted to the Chignik Bay District, 1986.

Stat.		Age									
Week	Catch	0.3	1.2	1.3	1.4	2.1	2.2	2.3	2.4	3.2	3.3
24	56,755	0	5,177	34,285	0	89	868	16,336	0	0	0
25	398,120	0	40,823	264,686	0	332	4,832	87,446	0	0	0
26	263,366	144	40,046	179,610	0	352	7,007	36,207	0	0	0
27	351,041	1,041	30,598	175,632	672	4	14,967	127,176	0	475	475
28	267,164	419	17,929	76,375	364	335	10,993	160,631	0	117	0
29	193,770	838	8,143	43,993	0	20	10,266	129,951	0	559	0
30	219,914	42	5,593	27,985	0	86	17,437	168,483	86	200	0
31	115,347	0	5,097	7,082	0	478	14,816	86,666	365	730	113
32	52,275	0	1,398	1,965	0	814	10,017	36,376	472	937	296
33	24,401	0	823	799	0	773	7,168	14,286	194	301	57
34	14,803	0	514	486	0	486	4,458	8,545	114	171	29
35	8,335	0	290	274	0	274	2,510	4,811	64	97	16
36	10,180	0	354	334	0	334	3,066	5,876	79	118	20
37	4,503	0	156	148	0	148	1,356	2,599	35	52	9
38	1,294	0	45	42	0	42	390	747	10	15	2
39	0	0	0	0	0	0	0	0	0	0	0
Total	1,981,268	2,484	156,989	813,697	1,036	4,568	110,151	886,136	1,419	3,772	1,016

Appendix B.5. Age composition of the Chignik sockeye escapement by statistical week with escapement time adjusted to the Chignik Bay District, 1986.

Stat.		Age									
Week	Catch	0.3	1.2	1.3	1.4	2.1	2.2	2.3	2.4	3.2	3.3
24	102,274	0	9,274	66,487	0	68	2,095	24,351	0	0	0
25	132,479	0	13,799	89,609	0	89	1,584	27,398	0	0	0
26	122,353	162	17,399	81,241	0	135	3,242	20,174	0	0	0
27	122,353	410	11,051	59,597	203	5	5,067	45,806	0	107	107
28	89,257	205	7,955	24,477	299	67	3,829	52,421	0	4	0
29	94,102	238	2,952	17,452	0	1	5,772	67,529	0	159	0
30	43,287	6	1,321	4,906	0	32	3,799	33,121	32	69	0
31	25,238	0	1,032	1,788	0	93	3,069	19,021	71	141	22
32	6,678	0	180	247	0	111	1,321	4,603	60	119	37
33	6,678	0	224	219	0	211	1,955	3,917	53	83	16
34	6,678	0	232	219	0	219	2,011	3,855	52	77	13
35	6,678	0	232	219	0	219	2,011	3,855	52	77	13
36	6,678	0	232	219	0	219	2,011	3,855	52	77	13
37	6,678	0	232	219	0	219	2,011	3,855	52	77	13
38	1,908	0	66	63	0	63	575	1,101	15	22	4
39	0	0	0	0	0	0	0	0	0	0	0
	773,319	1,021	66,181	346,962	503	1,751	40,352	314,861	438	1,013	237

Appendix B.6. Sex composition of the Chignik Bay District sockeye catch by statistical week, 1986.

Statistical Week	Sample			Catch				
	Females	Males	Total	Percent Females	Percent Males	Females	Males	Total
24	314	316	630	50	50	28,287	28,468	56,755
25	734	525	1,259	58	42	199,523	142,711	342,234
26	407	230	637	64	36	96,278	54,407	150,685
27	830	428	1,258	66	34	176,086	90,801	266,887
28	785	412	1,197	66	34	146,522	76,900	223,422
29	371	254	625	59	41	46,897	32,107	79,004
30	414	249	663	62	38	87,396	52,565	139,961
31	355	234	589	60	40	36,133	23,818	59,951
32	175	150	325	54	46	12,756	10,933	23,689
33	389	262	651	60	40	8,667	5,837	14,504
34-38[a]				60	40	19,169	12,910	32,079
Total	4,774	3,060	7,834	62	38	857,714	531,457	1,389,171

[a]Week 33 sample used to define sex composition for weeks 34-38.

Appendix B.7. Length (mm) composition by age and sex of the Chignik Bay District sockeye catch, 1986.

	AGE GROUP										
	0.3	1.2	2.1	1.3	2.2	1.4	2.3	3.2	2.4	3.3	Total
Females											
Mean Length	557	500	0	561	509	560	568	521	571	538	558
SE	9	2	-	1	2	7	0	6	22	17	0
Range	521-583	401-606	0-0	448-671	405-622	546-568	449-774	480-557	529-601	510-586	401-774
Sample Size	6	217	0	1708	234	3	1921	14	3	4	4110
Males											
Mean Length	583	471	323	582	499	632	591	555	572	0	563
SE	10	3	5	1	4	-	1	12	15	-	1
Range	565-600	314-625	285-395	395-656	330-615	632-632	415-692	535-575	544-631	0-0	285-692
Sample Size	3	307	26	945	232	1	1129	3	5	0	2651
All Fish											
Mean Length	566	483	323	568	504	578	576	527	572	538	560
SE	8	2	5	1	2	19	1	6	12	17	1
Range	521-600	314-625	285-395	395-671	330-622	546-632	415-774	480-575	529-631	510-586	285-774
Sample Size	9	524	26	2653	466	4	3051	17	8	4	6762

Appendix B.8. Age composition of sockeye escapement samples collected at the outlet of Black Lake, 1986.

Stat. Week	Age 0.2	0.3	0.4	1.2	1.3	1.4	2.1	2.2	2.3	Total
25	0	0	0	0	5	0	0	0	1	6
	0.0%	0.0%	0.0%	0.0%	83.3%	0.0%	0.0%	0.0%	16.7%	
26	1	22	1	80	640	4	0	14	149	911
	0.1%	2.4%	0.1%	8.8%	70.3%	0.4%	0.0%	1.5%	16.4%	
27	1	9	0	136	634	4	1	27	172	984
	0.1%	0.9%	0.0%	13.8%	64.4%	0.4%	0.1%	2.7%	17.5%	
Combined	2	31	1	216	1279	8	1	41	322	1901
	0.1%	1.6%	0.1%	11.4%	67.3%	0.4%	0.1%	2.2%	16.9%	

Appendix B.9. Sex composition of the composite sockeye escapement sample from the outlet of Black Lake, 1986.

Sample			Percent	
Females	Males	Total	Females	Males
1,206	919	2,125	56.8	43.2

Appendix B.10. Length composition by age and sex of the sockeye escapement sample collected at the outlet of Black Lake, 1986.

	AGE CLASS									
	0.2	0.3	1.2	2.1	0.4	1.3	2.2	1.4	2.3	Total
Females										
Mean Length	0	569	521	0	591	568	535	569	569	566
SE	-	4	7	-	-	1	8	12	2	1
Range	0-0	523-595	377-595	0-0	591-591	454-670	464-579	530-598	507-657	377-670
Sample Size	0	24	55	0	1	772	18	5	204	1079
Males										
Mean Length	432	575	478	443	0	588	523	608	589	564
SE	0	8	5	-	-	2	15	20	3	2
Range	432-432	549-602	386-613	443-443	0-0	403-660	406-622	573-641	425-647	386-660
Sample Size	2	7	161	1	0	500	23	3	116	813
All Fish										
Mean Length	432	571	489	443	591	576	528	584	576	565
SE	0	3	4	-	-	1	9	12	2	1
Range	432-432	523-602	377-613	443-443	591-591	403-670	406-622	530-641	425-657	377-670
Sample Size	2	31	216	1	1	1272	41	8	320	1892

Appendix B.11. Sex composition of the Chignik Bay District coho catch, 1986.

Sample			Catch				
Females	Males	Total	Percent Females	Percent Males	Females	Males	Total
126	316	442	29	71	17,160	43,037	60,197

Appendix B.12. Length (mm) composition of the Chignik Bay District coho catch by age and sex, 1986.

	AGE CLASS			
	1.1	2.1	3.1	Total
Females				
Mean Length	562	590	548	587
SE	16	5	16	5
Range	526-612	410-687	532-563	410-687
Sample Size	6	68	2	76
Males				
Mean Length	571	596	585	594
SE	11	3	17	3
Range	500-637	482-680	539-613	482-680
Sample Size	15	190	4	209
All Fish				
Mean Length	569	595	572	592
SE	9	3	14	2
Range	500-637	410-687	532-613	410-687
Sample Size	21	264	6	291

Appendix C.1. Salmon escapement survey counts in the Chignik Management Area, 1986.

District	Stream Number	Stream Name	Calander Day	Calander Date	Survey Cond.	Species: Chinook	Sockeye	Pink	Chum	Coho	Observer	Remarks
Chignik Bay	271 -106	Neketa	210	29-Jul	-	0	0	0	0	0	Wilke	
	271 -105	Dago Frank	210	29-Jul	-	0	0	0	0	0	Wilke	
	271 -104	Alfred	210	29-Jul	-	0	0	0	0	0	Wilke	
	271 -102 C	unnamed	208	27-Jul	Good	0	200	0	0	0	Probasco	All fish in lake, seine tracks in bay
Western	273 -845	Dog Bay	196	15-Jul	Good	0	0	0	0	0	Probasco	
	273 -845		210	29-Jul	Good	0	0	0	0	0	Wilke	25 chum at stream mouth
	273 -845		223	11-Aug	Good	0	0	0	0	0	Probasco	200 chum off stream mouth
	273 -844	unnamed	189	08-Jul	Fair	0	0	0	0	0	Manthey	
	273 -844		196	15-Jul	Good	0	0	0	0	0	Probasco	
	273 -844		210	29-Jul	Good	0	0	0	0	0	Wilke	25 chum at stream mouth
	273 -844		223	11-Aug	Good	0	0	0	0	0	Probasco	
	273 -843	Seal Bay	189	08-Jul	Fair	0	0	0	0	0	Manthey	
	273 -843		196	15-Jul	Good	0	0	0	0	0	Probasco	
	273 -843		210	29-Jul	Good	0	0	0	0	0	Wilke	2 chum at stream mouth
	273 -843		223	11-Aug	Good	0	0	0	30	0	Probasco	Additional 100 chum at stream mouth
	273 -842	Portage Bay	189	08-Jul	Fair	0	0	0	0	0	Manthey	
	273 -842		196	15-Jul	Good	0	0	0	0	0	Probasco	
	273 -842		210	29-Jul	Good	0	0	0	170	0	Wilke	All fish in lower 1/2 mile; addit. 40 chum at mouth
	273 -842		215	03-Aug	Good	0	0	0	90	0	Probasco	Few jumpers off mouth, poor visibilty in bay
	273 -842		223	11-Aug	Good	0	0	0	600	0	Probasco	Additional 2,500 chum at stream mouth
	273 -842		244	01-Sep	Good	0	0	500	2500	0	Probasco	
	273 -823	Spoon	210	29-Jul	Good	0	0	0	0	0	Wilke	
	273 -823		215	03-Aug	Poor	0	0	0	0	0	Probasco	
	273 -823		223	11-Aug	Good	0	0	40	0	0	Probasco	Additional 500 pinks at stream mouth
	273 -822	unnamed	210	29-Jul	Good	0	0	0	0	0	Wilke	
	273 -822		215	03-Aug	Poor	0	0	0	0	0	Probasco	
	273 -822		223	11-Aug	Good	0	0	0	0	0	Probasco	80 pinks at stream mouth
	273 -821	unnamed	210	29-Jul	Good	0	0	0	0	0	Wilke	
	273 -821		215	03-Aug	Poor	0	0	0	0	0	Probasco	

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District	Stream Number	Stream Name	Calander Day	Calander Date	Survey Cond.	Species Chinook	Sockeye	Pink	Chum	Coho	Observer	Remarks
	273 -821		223	11-Aug	Good	0	0	0	0	0	Probasco	100 pinks at stream mouth
	273 -802	Foot Bay	204	23-Jul	Good	0	0	0	0	0	Molyneaux	30 pinks at stream mouth
	273 -802		210	29-Jul	Good	0	0	0	0	0	Wilke	5 chums at stream mouth
	273 -802		215	03-Aug	Good	0	0	20	0	0	Probasco	
	273 -802		223	11-Aug	Good	0	0	200	0	0	Probasco	Additional 500 pinks at stream mouth
	273 -802		244	01-Sep	Good	0	0	3200	0	0	Probasco	
	273 -723	Fishrack	204	23-Jul	Good	0	0	0	0	0	Molyneaux	
	273 723		210	29-Jul	Good	0	0	0	0	0	Wilke	30 pinks at stream mouth
	273 723		215	03-Aug	Good	0	0	0	0	0	Probasco	30 pinks at stream mouth
	273 723		223	11-Aug	Good	0	0	50	0	0	Probasco	Addit. 4000 pinks at cr. mouth;sharks abund. in bay
	273 723		244	01-Sep	Good	0	0	3800	0	0	Probasco	
	273 -722	Ivan	189	08-Jul	-	0	0	0	0	0	Manthey	One jumper spotted off mouth
	273 -722		196	15-Jul	Good	0	0	0	0	0	Probasco	
	273 -722		204	23-Jul	Fair	0	0	0	0	0	Molyneaux	700 chum at stream mouth
	273 -722		210	29-Jul	Poor	0	0	600	0	0	Wilke	Fish count low due to conditions
	273 -722		215	03-Aug	Poor	0	0	200+	0	0	Probasco	Stream turbid
	273 -722		223	11-Aug	Good	0	0	8000	0	400	Probasco	Poor visibility in bay
	273 -722		244	01-Sep	Poor	0	0	9600	4000	0	Probasco	Creek high and muddy
	273 -720	West Ivan	204	23-Jul	Poor	0	0	0	0	0	Molyneaux	Stream turbid
	273 -720		210	29-Jul	Poor	0	0	0	0	0	Wilke	Stream turbid
	273 -720		215	03-Aug	Poor	0	0	0	0	0	Probasco	Stream turbid
	273 -720		223	11-Aug	Poor	0	0	0	0	0	Probasco	Stream turbid
	273 -720		244	01-Sep	Poor	0	0	0	0	0	Probasco	Stream turbid
	273 -702	Coal Cape	189	08-Jul	Good	0	0	0	0	0	Manthey	
	273 -702		204	23-Jul	Good	0	0	6000	0	0	Molyneaux	Addit. 300 pinks at mouth; most fish in lower cr.
	273 -702		210	29-Jul	Fair	0	0	2700	0	0	Wilke	Estimate low due to restricted visibility
	273 -702		215	03-Aug	Poor	0	0	560	0	0	Probasco	All fish in lower cr.; low count due to poor vis.
	273 -702		223	11-Aug	Poor	0	0	22000	0	0	Probasco	Most fish seen in sloughs and side channels
	273 -702		244	01-Sep	Poor	0	0	7200	0	0	Probasco	Estimate low
Perryville	275 -601	unnamed	204	23-Jul	Poor	0	0	0	0	0	Molyneaux	Stream turbid
	275 -601		210	29-Jul	Poor	0	0	0	0	0	Wilke	Stream turbid
	275 -601		215	03-Aug	Poor	0	0	0	0	0	Probasco	Stream turbid
	275 -601		223	11-Aug	Poor	0	0	0	0	0	Probasco	Stream turbid

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District	Stream Number	Stream Name	Calander Day	Calander Date	Survey Cond.	Species: Chinook	Sockeye	Pink	Chum	Coho	Observer	Remarks
	275 -601		244	01-Sep	Poor	0	0	0	0	0	Probasco	Stream turbid
	275 -600	unnamed	204	23-Jul	Poor	0	0	0	0	0	Molyneaux	Too turbid to count accurately
	275 -600		210	29-Jul	Poor	0	0	0	0	0	Wilke	Too turbid to count accurately
	275 -600		215	03-Aug	Poor	0	0	0	0	0	Probasco	Too turbid to count accurately
	275 -600		223	11-Aug	Poor	0	0	0	0	0	Probasco	Too turbid to count accurately
	275 -502	Humpback Bay	189	08-Jul	Good	0	0	0	0	0	Manthey	
	275 -502		196	15-Jul	Good	0	0	0	0	0	Probasco	
	275 -502		204	23-Jul	Good	0	0	60	0	0	Molyneaux	Addit. 2500 pinks at cr. mouth;fish in lower end
	275 -502		210	29-Jul	-	0	0	250	0	0	Wilke	All fish within lower end of creek
	275 -502		215	03-Aug	Fair	0	0	40	0	0	Probasco	
	275 -502		223	11-Aug	Poor	0	0	2000+	0	0	Probasco	Addit. 10000 pinks at mouth;low count due to cond.
	275 -502		244	01-Sep	Poor	0	0	0	0	0	Probasco	Could only see fish in shallows
	275 -504	unnamed	196	15-Jul	Good	0	0	0	0	0	Probasco	
	275 -504		204	23-Jul	Good	0	0	0	0	0	Molyneaux	
	275 -504		210	29-Jul	Good	0	0	0	0	0	Wilke	
	275 -504		215	03-Aug	Good	0	0	0	0	0	Probasco	
	275 -504		223	11-Aug	Good	0	0	0	0	0	Probasco	
	275 -504		244	01-Sep	Good	0	0	200	0	0	Probasco	
	275 -505	unnamed	189	08-Jul	Good	0	0	0	0	0	Manthey	
	275 -505		196	15-Jul	Good	0	0	0	0	0	Probasco	
	275 -505		235	23-Aug	Good	0	0	0	0	0	Molyneaux	
	275 -505		210	29-Jul	Good	0	0	0	0	0	Wilke	
	275 -505		215	03-Aug	Poor	0	0	40	0	0	Probasco	
	275 -505		223	11-Aug	Good	0	0	300	0	0	Probasco	Additional 3,500 pinks at stream mouth
	275 -505		244	01-Sep	Good	0	0	5000	0	0	Probasco	
	275 -506	unnamed	210	29-Jul	-	0	0	0	0	0	Wilke	Creek dry, log jam at creek mouth
	275 -506		223	11-Aug	-	0	0	0	0	0	Probasco	
	275 -406	Ivanof	189	08-Jul	Good	0	0	0	0	0	Manthey	
	275 -406		196	15-Jul	Good	0	0	0	200	0	Probasco	
	275 -406		204	23-Jul	Good	0	0	0	6000	0	Molyneaux	Additional 300 chum at stream mouth; fish scattered
	275 -406		210	29-Jul	-	0	0	0	6700	0	Wilke	Addit. 1200 pinks at cr. mouth; jumpers head of bay
	275 -406		215	03-Aug	Poor	0	0	0	1300	0	Probasco	High winds; low estimate due to conditions
	275 -406		223	11-Aug	-	0	0	5400	800	0	Probasco	Addit. 100000 pinks at mouth;high % of spawn-outs
	275 -406		224	12-Aug	Poor	0	0	0	0	0	Probasco	Windy; special opening in Ivanoff Bay

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District	Stream Number	Stream Name	Calander Day	Calander Date	Survey Cond.	Species: Chinook	Sockeye	Pink	Chum	Coho	Observer	Remarks
	275 -406		226	14-Aug	Fair	0	0	0	0	0	Probasco	Addit. 150000 pinks at mouth;windy;fresh fish gone
	275 -406		244	01-Sep	-	0	0	0	0	0	Probasco	Turbid;13000+ pink car.;25000+ pink & chum in bay
	275 -405	Sunnyside	189	08-Jul	-	0	0	0	80	0	Manthey	Addit. 12000 chums between mouth and dock pilings
	275 -405		196	15-Jul	Good	0	0	0	0	0	Probasco	Fish moved out (traveling?)
	275 -405		244	01-Sep	-	-	-	-	-	-	Probasco	Creek muddy, no survey
	275 -404	Wasco's	196	15-Jul	Good	0	0	0	0	0	Probasco	
	275 -404		244	01-Sep	Poor	0	0	10000+	0	0	Probasco	Strong escap.;vis. restricted; 2000 pink carcasses
	275 -402	Smokey Hollow	244	01-Sep	Poor	0	0	500+	0	0	Probasco	
Eastern	272 -963	Kilokak	217	05-Aug	Good	0	0	0	0	0	Wilke	2500 pinks at mouth;mouth marginal for fish passage
	272 -963		222	10-Aug	-	0	0	50	0	0	Probasco	Addit. 20000+ pinks in bay; lots of fish in kelp
	272 -963		228	16-Aug	-	0	0	0	0	0	Manthey	175,000 pinks off creek mouth
	272 -962 A	Glacier	209	28-Jul	-	0	0	0	0	0	Campbell	
	272 -962 A		217	05-Aug	Poor	0	0	0	0	0	Wilke	
	272 -962 A		222	10-Aug	Poor	0	0	0	0	0	Probasco	
	272 -962 B	unnamed	209	28-Jul	-	0	0	0	0	0	Campbell	
	272 -962 B		222	10-Aug	-	-	-	-	-	-	Probasco	Creek too muddy, no survey
	272 -961 A	Agripina Lake	217	05-Aug	Good	0	0	5	0	0	Wilke	Jumpers at mouth
	272 -961 A		222	10-Aug	Good	0	0	20000	0	0	Probasco	
	272 -961 B&C	Agripina	209	28-Jul	-	0	0	0	0	0	Campbell	150 pinks at stream mouth, 2 jumpers in bay
	272 -961 B&C		222	10-Aug	-	-	-	-	-	-	Probasco	Visibility too poor to count
	272 -921	Port Wrangell	209	28-Jul	Good	0	0	0	0	0	Campbell	
	272 -921		217	05-Aug	Good	0	0	0	0	0	Wilke	1,000 pinks at head of bay
	272 -921		222	10-Aug	-	-	-	-	-	-	Probasco	Creek too muddy, no survey
	272 -922	Wrangell	217	05-Aug	-	0	0	0	0	0	Wilke	100 pinks at cr. mouth, boat inshore of David Is.
	272 -923	Cape Providence	217	05-Aug	Good	0	0	0	0	0	Wilke	Jumpers off mouth
	272 -905	unnamed	196	15-Jul	Good	0	0	0	0	0	Probasco	
	272 -905		202	21-Jul	Good	0	0	0	0	0	Wright	

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District	Stream Number	Stream Name	Calander Day	Calander Date	Survey Cond.	Species: Chinook	Sockeye	Pink	Chum	Coho	Observer	Remarks
	272 -905		209	28-Jul	-	0	0	0	0	0	Campbell	1,500 pinks off mouth
	272 -905		217	05-Aug	Good	0	0	20	0	0	Wilke	Quite a few jumpers at creek mouth
	272 -905		222	10-Aug	Good	0	0	1000	100	0	Probasco	Bay turbid
	272 -905		231	19-Aug	-	0	0	1500	0	0	Probasco	Addit. 70-80 thousand off mouths of cr. 904 & 905
	272 -905		244	01-Sep	Good	0	0	84000	0	0	Probasco	Additional 1,000 pinks at mouth; high escapement
	272 -904	unnamed	196	15-Jul	Good	0	0	0	0	0	Probasco	
	272 -904		202	21-Jul	Good	0	0	0	0	0	Wright	
	272 -904		209	28-Jul	-	0	0	0	0	0	Campbell	1,000 pinks at stream mouth
	272 -904		217	05-Aug	Good	0	0	0	0	0	Wilke	100 pinks at stream mouth
	272 -904		222	10-Aug	Good	0	0	100	0	0	Probasco	
	272 -904		231	19-Aug	-	0	0	1000	0	0	Wright	Addit. 70-80 thousand off mouths of cr. 904 & 905
	272 -904		244	01-Sep	Good	0	0	8500	0	0	Probasco	
	272 -903 A&B	Chiginagak	196	15-Jul	Good	0	0	0	0	0	Probasco	
	272 -903 A&B		202	21-Jul	Fair	0	0	0	0	0	Wright	100 chum at stream mouth
	272 -903 A&B		209	28-Jul	-	-	-	-	-	-	Campbell	A & B too muddy to survey
	272 -903 A&B		217	05-Aug	Good	0	0	0	0	0	Wilke	
	272 -903 A&B		222	10-Aug	-	0	0	0	200	0	Probasco	Creek muddy, all fish spotted in sloughs
	272 -903 A&B		244	01-Sep	Good	0	0	14400	2000	0	Probasco	Bay muddy
	272 -902	unnamed	196	15-Jul	Good	0	0	0	0	0	Probasco	
	272 -902		202	21-Jul	Good	0	0	0	0	0	Wright	
	272 -902		209	28-Jul	-	0	0	0	0	0	Campbell	200 chums at stream mouth
	272 -902		217	05-Aug	Good	0	0	0	0	0	Wilke	20 pinks at stream mouth
	272 -902		244	01-Sep	Good	0	0	23500	0	0	Probasco	All fish in creek
	272 -901	unnamed	196	15-Jul	Good	0	0	0	0	0	Probasco	
	272 -901		209	28-Jul	-	0	0	0	0	0	Campbell	
	272 -901		217	05-Aug	Good	0	0	0	0	0	Wilke	
	272 -901		222	10-Aug	-	0	0	0	0	0	Probasco	5,000 pinks moving along the beach
	272 -901		244	01-Sep	Good	0	0	5600	0	0	Probasco	
	272 -900	Cape Kuyuyukak	196	15-Jul	-	0	0	0	0	0	Probasco	
	272 -900		209	28-Jul	-	0	0	0	0	0	Campbell	
	272 -900		217	05-Aug	Good	0	0	0	0	0	Wilke	350 pinks at stream mouth
	272 -900		244	01-Sep	Good	0	0	1800	0	0	Probasco	
	272 -805	unnamed	196	15-Jul	Good	0	0	0	0	0	Probasco	
	272 -805		209	28-Jul	-	0	0	0	0	0	Campbell	

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District	Stream Number	Stream Name	Calander Day	Calander Date	Survey Cond.	Species Chinook	Sockeye	Pink	Chum	Coho	Observer	Remarks
	272 -805		217	05-Aug	Good	0	0	0	0	0	Wilke	Additional 60 pinks at stream mouth
	272 -805		222	10-Aug	Good	0	0	5000	0	0	Probasco	Additional 20 pinks at stream mouth
	272 -805		244	01-Sep	Good	0	0	1200	0	0	Probasco	Additional 500 pinks at stream mouth
	272 -804	Nakalilok	196	15-Jul	Good	0	0	0	0	0	Probasco	
	272 -804		209	28-Jul	-	0	0	200	200	0	Campbell	All fish just above flats
	272 -804		217	05-Aug	Good	0	0	600	60	0	Wilke	
	272 -804		222	10-Aug	Fair	0	0	7000	1000	0	Probasco	Bay turbid, good show of fish along beach
	272 -804		244	01-Sep	Poor	0	0	12700	0	0	Probasco	Could not see fish in mainstem, all fish in sloughs
	272 -803	unnamed	196	15-Jul	Good	0	0	0	0	0	Probasco	
	272 -803		209	28-Jul	-	0	0	0	0	0	Campbell	400 pink & 200 chum at mouth & 200 pink along beach
	272 -803		217	05-Aug	Good	0	0	200	0	0	Wilke	Additional 200 pinks at stream mouth
	272 -803		244	01-Sep	Good	0	0	1500	0	0	Probasco	
	272 -802	unnamed	196	15-Jul	Good	0	0	0	0	0	Probasco	
	272 -802		209	28-Jul	-	0	0	200	200	0	Campbell	
	272 -802		217	05-Aug	Good	0	25	700	0	0	Wilke	Pinks fresh; sockeye colored-up
	272 -802		222	10-Aug	Poor	-	-	-	-	-	Probasco	Creek too muddy, no survey
	272 -802		244	01-Sep	Poor	-	-	-	-	-	Probasco	Creek high and muddy
	272 -801	unnamed	196	15-Jul	Good	0	0	0	0	0	Probasco	
	272 -801		209	28-Jul	Good	0	0	150	200	0	Campbell	Fish in stream near mouth
	272 -801		217	05-Aug	Good	0	0	1400	30	0	Wilke	
	272 -801		222	10-Aug	Poor	0	0	700	0	0	Probasco	Water turbid
	272 -801		244	01-Sep	Poor	0	0	1800	0	0	Probasco	Water high and turbid
	272 -721	Yantarni	196	15-Jul	Good	0	0	0	0	0	Probasco	
	272 -721		202	21-Jul	Good	0	0	0	0	0	Wright	
	272 -721		209	28-Jul	-	0	0	0	100	0	Campbell	12000 pinks and chums on flats & stream mouth
	272 -721		217	05-Aug	Good	0	0	3100	300	0	Wilke	
	272 -721		222	10-Aug	Poor	-	-	-	-	-	Probasco	Creek to muddy, no survey
	272 -721		244	01-Sep	Poor	-	-	-	-	-	Probasco	Creek to muddy, no survey
	272 -703	Northeast	196	15-Jul	Good	0	0	0	0	0	Probasco	
	272 -703		202	21-Jul	Good	0	0	0	0	0	Wright	
	272 -703		209	28-Jul	Good	0	0	800	0	0	Campbell	One seiner
	272 -703		217	05-Aug	Good	0	0	2400	0	0	Wilke	
	272 -703		222	10-Aug	Good	0	0	8600	0	0	Probasco	Additional 5,000 pinks at stream mouth
	272 -703		244	01-Sep	Poor	-	-	-	-	-	Probasco	Creek high and muddy, no survey

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District	Stream Number	Stream Name	Calander Day	Calander Date	Survey Cond.	Species: Chinook	Sockeye	Pink	Chum	Coho	Observer	Remarks
	272 -702	Main	196	15-Jul	Good	0	0	0	0	0	Probasco	
	272 -702		202	21-Jul	Good	0	0	0	0	0	Wright	
	272 -702		209	28-Jul	-	0	0	0	0	0	Campbell	
	272 -702		217	05-Aug	Good	0	0	8600	0	0	Wilke	
	272 -702		222	10-Aug	Good	0	80	85000	0	0	Probasco	High escapement
	272 -702		244	01-Sep	Poor	-	-	-	-	-	Probasco	Creek high and muddy, no survey
	272 -701	West	196	15-Jul	Good	0	0	0	0	0	Probasco	
	272 -701		209	28-Jul	Good	0	0	1500	0	0	Campbell	Addit. 2,500 pinks in stream mouth and along beach
	272 -701		217	05-Aug	Good	0	0	0	0	0	Wilke	
	272 -701		244	01-Sep	Poor	-	-	-	-	-	Probasco	Creek high and muddy, no survey
	272 -606	Cape Agutka	196	15-Jul	Good	0	0	0	0	0	Probasco	
	272 -606		202	21-Jul	Good	0	0	0	0	0	Wright	
	272 -606		209	28-Jul	Good	0	0	1100	400	0	Campbell	
	272 -606		222	10-Aug	Good	0	0	65000	0	0	Probasco	Addit. 3,600 pinks at cr. mouth; high escapement
	272 -606		244	01-Sep	Poor	0	0	40000+	0	0	Probasco	Creek very turbid, carcasses entire length of creek
	272 -605	Aniakchak	196	15-Jul	Poor	0	0	0	0	0	Probasco	Jumpers at river mouth, stream too muddy to survey
	272 -605		202	21-Jul	Poor	-	-	-	-	-	Wright	1 jumper at mouth, creek too muddy to survey
	272 -605		236	24-Aug	Poor	-	-	-	-	-	Campbell	Too muddy, no jumpers
	272 -605		209	28-Jul	Poor	-	-	1500	500	-	Campbell	Fish present; unable to count; 2 jumpers off mouth
	272 -605		217	05-Aug	Poor	0	0	200	0	0	Wilke	River muddy; all fish seen in side slough
	272 -605		222	10-Aug	Poor	-	-	-	-	-	Probasco	Too muddy, no survey
	272 -605		244	01-Sep	Poor	-	-	-	-	-	Probasco	Too muddy, no survey
	272 -604	Black	196	15-Jul	Poor	-	-	-	-	-	Probasco	Jumpers at entrance to lagoon; too muddy to count
	272 -604		202	21-Jul	Fair	0	0	0	0	0	Wright	
	272 -604		209	28-Jul	Good	0	0	7500	2500	0	Campbell	Majority of fish above lagoon
	272 -604		217	05-Aug	-	-	-	-	-	-	Wilke	Lagoon surveyed only; 1500 fresh pinks in lagoon
	272 -604		222	10-Aug	Poor	0	0	3500	0	0	Probasco	Water turbid
	272 -604		231	19-Aug	-	0	0	0	0	0	Wright	3-5 thousand pinks in lagoon
	272 -604		236	24-Aug	-	0	0	10700	0	0	Campbell	Count includes 400 pinks on flats
	272 -604		244	01-Sep	Poor	0	0	2700	0	0	Probasco	Cohos jumpers at mouth; creek high and muddy
Central	272 -516	Cape Kumlik	210	29-Jul	-	0	0	0	0	0	Wilke	
	272 -514	Northfork	196	15-Jul	Good	0	0	0	0	0	Probasco	
	272 -514		202	21-Jul	Good	0	0	0	0	0	Wright	

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District	Stream Number	Stream Name	Calander Day	Calander Date	Survey Cond.	Species Chinook	Sockeye	Pink	Chum	Coho	Observer	Remarks
	272 -514		210	29-Jul	Good	0	0	0	0	0	Wilke	
	272 -514		217	05-Aug	Good	0	0	6200	150	0	Wilke	Additional 500 pinks at stream mouth; fish fresh
	272 -514		222	10-Aug	Good	0	0	27000	100	0	Probasco	
	272 -514		231	19-Aug	Good	0	0	15000+	0	0	Wright	Incomplete survey
	272 -514		236	24-Aug	-	0	0	20000	5000	0	Campbell	Additional 500 pinks at stream mouth
	272 -514		244	01-Sep	Good	0	0	8000	0	0	Probasco	1st & 2nd forks 4500 & 3500 pinks;total 4500+ car.
	272 -512	unnamed	202	21-Jul	Good	0	0	0	0	0	Wright	
	272 -512		210	29-Jul	-	0	0	0	0	0	Wilke	
	272 -511 B	unnamed	202	21-Jul	Good	0	0	0	0	0	Wright	
	272 -511 B		210	29-Jul	Good	0	0	0	50	0	Wilke	
	272 -511 A	unnamed	202	21-Jul	Good	0	0	0	0	0	Wright	
	272 -511 A		210	29-Jul	Good	0	0	0	0	0	Wilke	
	272 -510	unnamed	202	21-Jul	Good	0	0	0	0	0	Probasco	
	272 -510		210	29-Jul	Good	0	0	0	0	0	Wilke	
	272 -509	Rudy's	196	15-Jul	Good	0	0	0	0	0	Probasco	
	272 -509		202	21-Jul	Good	0	0	0	0	0	Wright	
	272 -509		210	29-Jul	Good	0	0	0	1150	0	Wilke	
	272 -509		222	10-Aug	Good	0	0	13325	7175	0	Probasco	Additional 2,000 chums at stream mouth
	272 -509		236	24-Aug	Good	0	0	16000	4000	0	Campbell	Count includes carcasses
	272 -508	unnamed	202	21-Jul	Good	0	0	0	0	0	Wright	
	272 -508		210	29-Jul	Good	0	0	0	300	0	Wilke	
	272 -508		222	10-Aug	Good	0	0	3500	100	0	Probasco	
	272 -507	unnamed	202	21-Jul	Good	0	0	0	0	0	Wright	
	272 -507		210	29-Jul	Good	0	0	0	2500	0	Wilke	Additional 500 chums at stream mouth
	272 -507		222	10-Aug	Good	0	0	0	2650	0	Probasco	All fish spawning or spawned out
	272 -506	Packers	202	21-Jul	Good	0	0	0	0	0	Probasco	
	272 -506		210	29-Jul	Good	0	0	0	0	0	Wilke	400 chum at stream mouth
	272 -506		222	10-Aug	Good	0	0	0	1700	0	Probasco	All fish spawning
	272 -505	Bear	196	15-Jul	Fair	0	0	0	0	0	Probasco	1,000 chum at stream mouth
	272 -505		202	21-Jul	Good	0	0	0	0	0	Wright	
	272 -505		210	29-Jul	Good	0	0	0	0	0	Wilke	750 chum at stream mouth

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District	Stream Number	Stream Name	Calander Day	Calander Date	Survey Cond.	Species: Chinook	Sockeye	Pink	Chum	Coho	Observer	Remarks
	272 -505		217	05-Aug	-	0	0	0	3100	0	Wilke	All fish colored up, no fish in bay, low tide
	272 -505		222	10-Aug	Good	0	0	0	7500	0	Probasco	Count includes carcasses
	272 -504	unnamed	210	29-Jul	-	0	0	0	0	0	Wilke	Lower water creek mouth blocked except at high tide
	272 -504		217	05-Aug	Good	0	0	0	0	0	Wilke	
	272 -504		222	10-Aug	Good	0	0	0	0	0	Probasco	
	272 -503	unnamed	210	29-Jul	-	0	0	0	0	0	Wilke	60 pinks at stream mouth, fish located between 502A-503
	272 -502	Waterfall	202	21-Jul	Good	0	0	0	0	0	Wright	
	272 -502		210	29-Jul	Good	0	0	50	0	0	Wilke	Additional 120 pinks at stream mouth
	272 -502		217	05-Aug	Good	0	0	360	50	0	Wilke	
	272 -502		222	10-Aug	Poor	0	0	0	0	0	Probasco	20 pinks at stream mouth, glare conditions
	272 -501	Cape Kumliun	202	21-Jul	Good	0	0	0	0	0	Wright	
	272 -501		210	29-Jul	Good	0	0	20	0	0	Wilke	
	272 -501		222	10-Aug	Good	0	0	15000	0	0	Probasco	Additional 20,000 additional pinks along beach
	272 -501		236	24-Aug	Good	0	0	30000	0	0	Campbell	Additional 500 pinks along beach
	272 -501		244	01-Sep	Fair	0	0	8600	0	0	Probasco	Additional 1,000+ carcasses
	272 -302	Hook Bay	196	15-Jul	Good	0	0	0	0	0	Probasco	
	272 -302		210	29-Jul	Good	6	0	110	0	0	Wilke	
	272 -302		217	05-Aug	Good	0	0	95	35	0	Wilke	
	272 -302		222	10-Aug	Good	3	0	500	40	0	Probasco	
	272 -302		236	24-Aug	Good	0	0	6500	0	0	Campbell	6000 pinks in stream, 500 pinks in flats
	272 -206	Dry	210	29-Jul	-	0	0	50	0	0	Wilke	All fish within first 1/2 mile
	272 -205	McKinsey	210	29-Jul	-	0	0	0	0	0	Wilke	
	272 -204	Thompson Valley	210	29-Jul	Good	0	0	250	0	0	Wilke	
	272 -202 A	unnamed	210	29-Jul	Good	0	0	250	0	0	Wilke	
	272 -201	unnamed	210	29-Jul	Good	0	0	0	0	0	Wilke	

Appendix C.2. Peak escapement counts and estimated total escapements of pink and chum salmon by district and stream for the Chignik Management Area, 1986.

District	Stream Number	Stream Name	Pink[a] Peak Count	Pink[a] Total Est. Escap.	Chum[a] Peak Count	Chum[a] Total Est Escap.
Chignik Bay	271-106	Neketa	0	0	0	0
	271-105	Dago Frank	0	0	0	0
	271-104	Alfred	0	0	0	0
	271-102 C	Unnamed	0	0	0	0
	Chignik District Totals:		0	0	0	0
Central	272-516	Cape Kumlik	0	0	0	0
	272-514	Northfork	27,000	34,303	5,000	5,000
	272-512	unnamed	0	0	0	0
	272-511	unnamed	0	0	50	50
	272-511 A	unnamed	0	0	0	0
	272-510	unnamed	0	0	0	0
	272-509	Rudy's	16,000	38,030	7,175	10,852

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Appendix C.2. (p 2 of 7)

District	Stream Number	Stream Name	Pink[a] Peak Count	Pink[a] Total Est. Escap.	Chum[a] Peak Count	Chum[a] Total Est Escap.
	272-508	unnamed	3,500	3,500	300	300
	272-507	unnamed	0	0	2,650	5,453
	272-506	Packer's	0	0	1,700	1,700
	272-505	Bear	0	0	7,500	7,500
	272-504	unnamed	0	0	0	0
	272-503	unnamed	0	0	0	0
	272-502	Waterfall	360	360	50	50
	272-501	Cape Kumliun	30,000	38,228	0	0
	272-302	Hook Bay	6,500	6,930	40	40
	272-206	Dry	50	50	0	0
	272-205	McKinsey	0	0	0	0
	272-204	Thompson Val.	250	250	0	0

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District	Stream Number	Stream Name	Pink[a] Peak Count	Pink[a] Total Est. Escap.	Chum[a] Peak Count	Chum[a] Total Est Escap.
	272-202 A	unnamed	250	250	0	0
	272-201	unnamed	0	0	0	0
	Central District Totals:		83,910	121,901	24,465	30,945
Eastern	272-963	Kilokak	50	50	0	0
	272-962 A	Glacier	0	0	0	0
	272-962 B	unnamed	0	0	0	0
	272-961 A	Agripina Lake	20,000	20,000	0	0
	272-961 B&C	Agripina	0	0	0	0
	272-921	Port Wrangell	0	0	0	0
	272-922	Wrangell	0	0	0	0
	272-923	Cape Providence	0	0	0	0
	272-905	unnamed	84,000	84,000	100	100

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Appendix C.2. (p 4 of 7)

District	Stream Number	Stream Name	Pink[a] Peak Count	Pink[a] Total Est. Escap.	Chum[a] Peak Count	Chum[a] Total Est Escap.
	272-904	unnamed	8,500	8,927	0	0
	272-903 A&B	Chiginagak	14,400	21,120	2,000	3,293
	272-902	unnamed	23,500	42,300	0	0
	272-901	unnamed	5,600	8,213	0	0
	272-900	Cape Kuyuyukak	1,800	3,240	0	0
	272-805	unnamed	5,000	10,760	0	0
	272-804	Nakalilok	12,700	12,700	1,000	1,000
	272-803	unnamed	1,500	3,167	0	0
	272-802	unnamed	700	700	200	200
	272-801	unnamed	1,800	1,800	200	200
	272-721	Yantarni	3,100	3,100	300	300
	272-703	Northeast	8,600	8,600	0	0
	272-702	Main	85,000	85,000	0	0

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Appendix C.2. (p 5 of 7)

District	Stream Number	Stream Name	Pink[a] Peak Count	Pink[a] Total Est. Escap.	Chum[a] Peak Count	Chum[a] Total Est Escap.
	272-701	West	1,500	1,500	0	0
	272-606	Cape Agutka	65,000	65,000	400	400
	272-605	Aniakchak	1,500	1,500	500	500
	272-604	Black	10,700	18,067	2,500	2,500
	Eastern District Totals:		354,950	399,744	7,200	8,493
Western	273-845	Dog Bay	0	0	0	0
	273-844	unnamed	0	0	0	0
	273-843	Seal Bay	0	0	30	30
	273-842	Portage Bay	500	700	2,500	4,953
	273-823	Spoon	40	40	0	0
	273-822	unnamed	0	0	0	0
	273-821	unnamed	0	0	0	0

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Appendix C.2. (p 6 of 7)

District	Stream Number	Stream Name	Pink[a] Peak Count	Pink[a] Total Est. Escap.	Chum[a] Peak Count	Chum[a] Total Est Escap.
	273-802	Foot Bay	3,200	4,884	0	0
	273-723	Fishrack	3,800	5,417	0	0
	273-722	Ivan	8,000	10,133	0	0
	273-720	West Ivan	0	0	0	0
	273-702	Coal Cape	22,000	22,000	0	0
	Western District Totals:		37,540	43,174	2,530	4,983
Perryville	275-601	unnamed	0	0	0	0
	275-600	unnamed	0	0	0	0
	275-502	Humpback Bay	2,000	2,000	0	0
	275-504	unnamed	200	280	0	0
	275-505	unnamed	5,000	7,680	0	0
	275-506	unnamed	0	0	0	0

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District	Stream Number	Stream Name	Pink[a] Peak Count	Pink[a] Total Est. Escap.	Chum[a] Peak Count	Chum[a] Total Est Escap.
	275-406	Ivanof	5,400	5,400	6,700	7,570
	275-405	Sunnyside	0	0	80	80
	275-404	Wasco's	10,000	10,000	0	0
	275-402	Smokey Hollow	500	500	50	50
	Perryville District Totals:		23,100	25,860	6,830	7,700
TOTAL ALL DISTRICTS:			499,500	590,679	41,025	52,121

a/ Escapements determined from spawner abundance curves derived from aerial escapement surveys under fair or better visiability conditions and an assumed, 15 day average stream life for pink and chum salmon. The exception was that the peak count was used in instances when the peak count exceeded the computed estimate.

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